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CONTENTS

Sociological Problems of Modern Language Instruction
David Snedden

Objectives of a Professional Course in the History of Education
Fletcher Harper Swift

A Brief History of Mental Tests
Andrew Tennant Wylie

Some Applications of Our Newer Knowledge of Nutrition
Mary Swartz Rose

Scales for Measuring Habits of Good Citizenship
Clara F. Chassell, Siegried Maia Upton, and Laura M. Chassell

College News and Departmental Notes

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TEACHERS COLLEGE RECORD

VOL. XXIII JANUARY, 1922 No. 1

SOCIOLOGICAL PROBLEMS OF MODERN LANGUAGE INSTRUCTION IN PUBLIC SCHOOLS

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I

In contemporary efforts to substitute scientific for faith values in secondary education, early consideration should be given to the modern languages. These share with Latin and algebra protected positions made by college entrance requirements. Public credulity as to their values is easily intrigued. Instruction in public school French, Spanish, and German now costs probably not far from $10,000,000 annually in the United States. It is a safe estimate that on the average each of 500,000 students gives at least 350 hours of time to the study of these subjects yearly. The results of this investment of money and learning energy ought soon to be capable of approximate inventory. What proportion of the thousands of youths who, ten to thirty years ago, gave an average of two hours a day for two to four years to French or German or both, have now any tangible powers or appreciations to show for their outlay? What proportion ever use a modern language or would have occasion to do so if they could?

Such a survey would not, of course, answer all important questions. Granted the probability of a poor showing in past accomplishments, we still have before us problems of social and individual needs. These can be suggested by such questions as the following:

1. Is it now, or will it probably be during the next century, important to our country or to substantial social groups in it, that some Americans be able to read, write, and speak French up to some reasonable standards of precision and fluency? Most

well-informed judges would answer this question in the affirmative; but they would disagree seriously as to proportions. "More than 100 at any one time, certainly; but less than 10,000,000." Could we get more exact estimates as a basis of policies of encouragement, support, standards? What are the probable optimum needs of international trade, diplomacy, travel, exchange of learning? The study of this problem requires also, obviously, at least moderately accurate estimates of costs. How long, generally, does it take youths of good abilities to attain to reasonable degrees of proficiency, in reading, writing, and speaking French? Is travel abroad essential? Should the study be commenced at the age of nine or twelve to assure acceptable results? Should only learners of exceptional promise be permitted to enter upon the enterprise?

2. Is it now, or will it probably be during the next century, important that considerable numbers of Americans be trained to the standards of a moderate reading knowledge only in French? Will it be important chiefly to the individuals themselves, or to the country, or to business or other interests in it? Will it probably be desirable that one per cent or fifty per cent of our adults be so equipped? How are such powers to be kept functional through adult years? In the case of what probable proportions of persons now making their way in life, under conditions not necessitating reading of French, is such knowledge now kept functional? Apart from the emergencies of the war, what proportions of Americans now find pressing occasions to use French of this standard? What proportions probably could use it if such occasions arose?

3. During the next half century there is every probability that our relationships with Mexico, Central America, and South America will be extended and intensified in a variety of ways—commercially, diplomatically, culturally. We can consider the prospective situations from the standpoint of international well-being, the successful development of commerce, or helping individual men and women to success.

From the standpoint of the peoples concerned, is it important that a few (one hundredth of one per cent), a substantial proportion (one per cent) or many (five to twenty per cent) of our people be so trained that they can read and speak Spanish with ease?

What will be the probable demands of commerce during the next half century for men who can travel in Spanish speaking countries, and speak the language readily; for women stenographers in New York, Seattle, Detroit, New Orleans, Buffalo, who can take dictation in Spanish or translate letters dictated in English into Spanish; for women clerks who can translate communications from Spanish into English; or for commercial representatives in home offices in San Francisco, Salt Lake City, Kansas City, Pittsburgh, Baltimore, who can conduct correspondence in Spanish?

To what probable extent and under what circumstances will a ready reading knowledge of Spanish prove a valuable asset to all, some, or very few young men, soon to be in vocational school preparation for law, electrical engineering, mining engineering, railway building, dentistry, concrete structural work, bank accounting, or high-school teaching of mathematics? Answer for residents in southern Texas, Minnesota, Alabama, California, Maine. To what extent will a moderate reading and writing knowledge of Spanish prove a helpful vocational asset to all, some, or very few young women now in course of vocational preparation for stenography, department store salesmanship, filing? Answer for Los Angeles, North Dakota, Louisiana, Vermont, Boston.

4. During the next half century it is practically certain that our relationships with the Japanese people will develop in a variety of ways. From the standpoint of international harmony and goodwill, mutual cultural reinforcement, and economic cooperation, is it important that many, a few, or a very few Americans be able to speak, read and write, only speak, or only read Japanese? Will incidence of this need be felt more keenly in California than in New Hampshire, in Illinois than in Georgia?

5. Is there need that the following languages be offered in our public schools: Chinese, Portuguese, Polish, German, Turkish?

II

Are there tangible or intangible values probably to be derived from the study of a modern language even when such study shows in later years no substantial continuing powers of reading, speaking, or auditory mastery? Are these values to be gained in

improved English, in social appreciations, or in cultural appreciations? Or is it probable that a form of mastery at the age of eighteen which gives free reading powers, to be freely exercised for the next five years, after which they are allowed to fall into abeyance, to rust and disintegrate, has nevertheless left important contributions in tastes, appreciations, breadth of view and in English? Is it practicable to try to discover these results?

The educability of different people in modern language powers doubtless varies greatly, as does probably the educability of a given individual from the age of two to fifty. Perhaps such educabilities vary greatly, too, according as we have in view respectively objectives of speech, written composition, oral reading, silent reading, and audition, with comprehension within a given language. Many difficulties still obstruct the accurate determination of these. Nevertheless some crude standards should even now be practicable. Hence arise such problems as the following:

1. Eliminating very exceptional cases, for pupils of average or greater intelligence for their age,—we will say fourteen to eighteen and upward,—how much time in actual hours of outside study, class recitation, individual drill, per year, and how many years, under prevalent typical conditions of learning interest, ability of teachers, accepted methods of teaching, etc., ought to be required, in the case of French: for the first two "Carnegie" units of college admission; or to obtain a fluent speaking and reading, but not necessarily writing, knowledge; or to obtain a very ready silent reading knowledge, accompanied by very moderate ability in pronunciation, conversation or writing?

2. If these abilities, set as objectives at the end of a specified school period, are also to be found in at least undeteriorated form at thirty-five years of age, what must have been the character and extent of the intervening practice, study, and interest? To achieve these results, what will, on the average, be the necessary annual total outlay of public funds per pupil?

3. Would the processes of supplying to our country or society needed French language powers probably be rendered much more effective if we permitted only persons of exceptional intelligence or linguistic ability, or linguistic promise, or interest to take such studies? Would such procedure probably result in

great economies? Would it be undemocratic, or at least more undemocratic than present practices of excluding inferior minds from engineering colleges?

4. Is it probable that social needs for French could better be met by providing for earlier beginnings in the study, as is common in European schools, and still more so in homes of prosperous, cultivated families? If such a plan were adopted, how should we select pupils? What differences in method and teaching ability should be provided for? What should be expected as to the amount of time to be given to the subject? Answer with reference to the following desired objectives at the ages eighteen, twenty-two, and forty: moderate reading power; excellent or ready reading power; speaking powers alone; speaking, writing and reading powers sufficient for free commercial or cultural intercourse. What will be the probable per capita costs of this system?

5. What are the possibilities that needs for French could practicably be met by deferring beginnings of instruction to that time when the need is actually experienced for service—by consuls, travellers, clerks, salesmen, readers with leisure and interests? Assuming public schools ready to offer to adults approved instruction under these conditions, what would be the impediments, impossibilities, economies, efficiencies?

From this point of vantage, how could we evaluate present results of commercialized private schools, phonograph methods, the methods adapted by missionaries, travellers, salesmen?

6. We greatly need similar analysis of objectives and methods in other languages—Chinese, German, Italian, Japanese. Supplemental questions of values will appear, for example:

a. Is Japanese "so remote" that it is hopeless to undertake it in urban high schools?

b. Is it greatly worth while to urge the study of Spanish for non-vocational purposes? What are these—in terms of classical literature, contemporary writings, possible social intercourse? Travel? Consular and other political service?

c. Because so many Chinese are learning English is it practically needless that any considerable numbers of Americans learn Chinese?

d. Is it at best practicable for Americans to obtain only a speaking knowledge of Chinese, leaving all communication in writing or print to Chinese who can use English?

III. CASE PROBLEM

From the standpoint of administration, of procuring really effective selection of objectives whereon to construct curricula, and perhaps of financial economy, the modern language studies present some readily accessible problems. These can best be brought into relief through concrete "case" situations.

1. A small city of five thousand inhabitants in agricultural South Dakota has a high school with an average attendance of two hundred. It is also about to provide a junior high school (7th and 8th grades only) to accommodate about two hundred more. There is a commercial department of sixty pupils. The high school is expensive, and is not yet providing good instruction in home economics, literature, or civics. For years French and German, two years of each, have been taught. Teachers have usually been young, with fair grammatical and reading knowledge, but with no material conversational abilities. Now a strong contingent of citizens insist on introducing Spanish in the commercial department. It will be very expensive if competently taught, very superficial if economically taught. Also it is being urged that one or more modern languages be offered in the seventh grade of the junior high school. It is quite fashionable for pupils to take two modern languages, especially since colleges sometimes require them, and even normal schools give credit for them. "Follow up" surveys show, however, that hardly two per cent of graduates, at age thirty, have any powers or interests in a foreign language or its literature. Appreciations remaining are vestigial. They show that less than five per cent of students using modern language for admission to college actually use the subject during or after their college years.

The junior and senior high schools will require approximately $25,000 annually to provide for instruction. We can imagine ourselves asked to advise the authorities as to the following problems which confront them:

a. How much of the above sum should be spent for modern language instruction?

b. Should the offerings be in the form of three modern languages for two years each, two languages for two years each, one language for two, four or six years, or one language, Spanish, for two years only, and one other, French, for two or four years?

c. Is it desirable that all high-school pupils be encouraged to

elect a modern language? Should this option be extended to the seventh grade? Should election of a modern language be restricted to those of proved exceptional ability in English or of high intelligence rating or of clear determination to go to a college requiring a modern language for admission?

d. Should all be permitted to elect a second modern language and if so in what relation to the first? Should the election of a second language be conditioned on proved ability in the first?

e. Is it of any great importance that Spanish be offered in the commercial department for the boys, for the girls? To what probable ends will this instruction lead?

f. Are the following recommendations sound?

(*a*) That the high school offer only French.

(*b*) That it employ a teacher expert in teaching French pronunciation and speech.

(*c*) That it offer only two "subjects" in French, French *A* and French *B*.

(*d*) That French *A* shall be designed to give a fairly complete reading mastery, and a moderate speaking, audition, and writing mastery of French. It shall be open only to seventh grade pupils of the highest third in intelligence and the highest fourth in English language studies, and whose parents will pledge their aid to insure that the subject shall be studied throughout the six grades, and later in college. Not more than twenty pupils may enter the lowest class in one year. Pupils will agree to give one out-of-school hour daily to conversation practice, and to read at least two hundred to five hundred pages of prose each summer vacation.

(*e*) That French *B* shall be a two years' course designed to give fair reading ability in French prose, stressing grammar and pronunciation only to the very slight extent necessary for such reading mastery. It will be open only to second or third year senior high-school pupils who expect to attend college.

2. A commercial department in the high school of city F of 50,000 population in Ohio has an average attendance of two hundred girls and seventy-five boys. Fifty per cent of pupils remain two years or less, then take up some form of salesmanship. Girls finishing the four years' course generally become stenographers, eighty per cent marrying after five to seven years at wage earning. Boys usually enter junior clerical posts, and after

three to ten years' apprenticeship become travelling salesmen or partners in mercantile firms. Rather superficial two years' courses in Spanish, French, and German are now offered, the Spanish being designed chiefly for the commercial department pupils. One modern language is obligatory for all students. The more ambitious frequently take two, beginning the second one or two years after the first. Let us assume that we are asked to advise on behalf of the commercial department only, as to these problems:

a. Should two years of a modern language be required of all (*a*) girls, or (*b*) boys?

b. Should it be required as a condition for a four years' diploma?

c. Should Spanish be offered at all? Why? Should it be offered at all if only poor instruction can be provided? Should it be offered if the financial burden of the school seems already very heavy?

d. If Spanish is offered, should first-year pupils be permitted freely to elect it? Should conditions be imposed?

e. Criticise this proposal: The school authorities of city F should not offer Spanish in their schools unless they feel able to pay for a high-grade teacher capable of providing courses for at least four years, rich in spoken and written Spanish. Only those commercial students should be permitted to elect the subject who rank high in English, who expect to remain four years, who will pledge themselves to continue the subject for four years if permitted, and who will agree to give not less than two hours daily to oral practice.

IV. RELATIVE VALUES

The most difficult problem in determining social needs for various types or degrees of modern language instruction is that of *relative* values. Doubtless any or all modern languages would have some value, social or individual, as well as interest, if there were no other subjects to be taught. But in all upper grades a multiplicity of subjects is now available. Which shall be required, which permitted, which prohibited—and for what types of students or individuals? Can we find means of *comparative* evaluation?

The Commission on the Reorganization of Secondary Educa-

tion classifies all objectives under seven heads—health, vocation, citizenship, family membership, ethical understanding, leisure, fundamental processes. The study of a foreign language has no obvious place in first, fourth and fifth of these. By no ordinary interpretation has it a place in the seventh.

1. As a vocational tool each modern language becomes of great importance to some people. Scientific studies are needed now to give us:

a. The *kinds* of mastery that are useful for: technical workers in America seeking to utilize recent advances recorded only in German, Japanese, Dutch, Italian, etc.; commercial travellers to China, Brazil, Petrograd, etc.; clerical workers in home port cities; engineers expecting to do work in foreign ports, and many others.

b. The cost in time and money of each form of mastery for different ages.

c. The *relative* importance of the mastery of a modern language compared with other forms of vocational mastery.

2. Qualities of good citizenship are of two kinds—virtues of conformity and virtues of initiative or leadership. Foreign language mastery contributes nothing to the former, but it may enable well-educated men and women to serve society greatly through leadership, especially in international relationships.

3. Right use of leisure involves possession of intellectual and aesthetic interests. We see now a small percentage of cultivated men and women thus using the languages, literatures, and travel contacts with foreign countries. Very few of their scholarly attainments are yet the products of public schools or state universities.

But superficially or partially taught language is not usually an asset in this connection, is it? What proportion of the million youths of America who in the last twenty years have studied French or German can count results for leisure or personal culture? What are the probabilities that a considerable (ten, one, one-tenth of one) percentage of men and women can use such mastery as an asset towards leisure in the future?

V. PROVISIONAL THESES

In view of prevailing uncertainties as to educational values of foreign language study it seems desirable that discussion of specific issues should be stimulated. Such discussion will eventu-

ally lead to research. The following theses, contributing to such discussion, suggest some of the administrative problems involved.

1. The well-being of society at large, as affected by America, no less than the well-being of America itself will require during the next century that modern language study be encouraged in our schools and colleges.

2. Such study should not be restricted to three or four languages. Each tongue spoken by substantial numbers of men organized into influential nations should be represented.

3. The fundamental objectives of such study are of three kinds—cultural, civic, and vocational. The significance of each kind of objective to society or to individuals,—frequently to both simultaneously,—should be clearly understood and expressed by those promoting or permitting the use of public funds for such study of any particular language.

4. At least two conditions are essential to the attainment of these respective objectives: (*a*) the numbers of persons required, induced or permitted to take the study should show reasonable relation to the social need; and (*b*) the extent and character of the individual mastery expected to be achieved at present and to continue should be defined, and its probable cost in time and money evaluated. Until we have at least approximately correct estimates on these counts, our administrative proposals must be made in the dark.

5. As regards any given foreign language it is now certain that little or nothing of social or individual good is to be gained by inducing or even permitting *large* numbers (e.g., fifty per cent of liberal arts, medical, or engineering college students, thirty per cent of all high-school students) to undertake its mastery.

6. As regards any given foreign language little of importance is accomplished for society or for individuals from *brief* and *superficial study*—six hundred or seven hundred hours or two years of one and one-half to two hours daily by high-school pupils carrying three other studies concurrently.

7. It is against sound public and educational policy for any liberal arts college to require a foreign language as a universal condition of admission or in college courses.

8. It is against sound public and educational policy for any vocational school (here restricted to professional school) to require any foreign language for admission or in college study,

except on the basis of positive demonstration of its probable use or needfulness in the vocation being prepared for.

9. It is against sound public and educational policy for any secondary school to require the study of a foreign language in any course.

10. It is against public policy for a secondary school to permit students of inferior intelligence, or scholastic ability, or educational prospects (in predictable length and quality of schooling) to elect foreign language study.

11. It is against public policy for any secondary school to permit students to elect the study of a foreign language except on the basis of a clear understanding of the time and labor required for minimal worthwhile accomplishment; such understanding to be followed by a pledge on the part of the pupil and his guardian that all reasonable efforts shall be made on the part of the student to achieve such mastery.

12. Since different *kinds* of mastery of foreign language require, or at any rate permit, different grades of teaching equipment, teachers should be given credentials only on the basis of the standards they can reach in their work. For example, a teacher might be certificated to teach French prose reading only, but not conversation.

13. No high school of less than fifty pupils should be expected to offer a foreign language.

14. No high school of less than two hundred pupils should be expected to offer more than one foreign language.

15. Large high schools and colleges should be encouraged, even by special grants supplemented by travelling fellowships, to provide for the teaching of foreign languages not now found in such schools, e.g., Chinese, Portuguese, Polish, etc.

THE SPECIFIC OBJECTIVES OF A PROFESSIONAL COURSE IN THE HISTORY OF EDUCATION

By FLETCHER HARPER SWIFT
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As far as can be ascertained, the study of the history of education began near the close of the eighteenth century. The first attempt was probably made by Monglesdorf in Germany in 1779, and was followed fifteen years later by Ruhkopf. The history of education may thus claim the honor of having been one of the first subjects to be organized for a teachers' training course. For several generations along with courses in philosophy, logic, and ethics it occupied a chief place among subjects required of prospective teachers in a limited number of institutions which attempted to provide such training.

Later began the establishment of definite college professorships in education. These professorships were in the majority of cases placed in the arts faculty. Frequently they were combined with a chair in philosophy. During the last decade the situation has entirely changed with respect to the organization of teachers' training courses, the variety of courses offered, and the fields covered. The history of education as a professional subject must now compete not with logic, ethics, and philosophy, but with courses in applied psychology, courses in school administration, courses in school finance, secondary education, the junior high school, elementary education, and various other studies, the professional and practical values of which are definite and consequently easily evident to the prospective teacher. In this changed situation it is necessary that the history of education become introspective, and attempt to ascertain definitely what it has to offer as a professional study to prospective teachers, principals, superintendents, and other school officers; in other words, it must define its specific objectives as a professional subject.

Various attempts have been made to formulate a statement of the purposes and objectives of the history of education. Perhaps the most notable in recent years is that contained in

the monograph by Burnham and Suzzallo on the "History of Education as a Professional Subject," issued in 1908.[1] The study recently published by the Carnegie Foundation for the Advancement of Teaching on the professional preparation of teachers for American public schools, devotes three pages to the history of education.

Before we undertake to answer the question what ought to be the specific aims or objectives of a teachers' professional course in the history of education, it may be well to ask what have been the aims which heretofore have largely determined the character of courses in this field. A study of the courses in the history of education as actually given seems to show that they have been determined chiefly by two aims. The first of these may be summed up in the expression professional culture; the second, as an aim to supply prospective teachers and educators with warnings on the one hand, and with guides on the other hand. In defense of the first of these aims, it has been asserted that a study of the history of education broadens the educator's professional view and deepens his understanding of the meaning of education. By a study of the educational systems of various nations, and particularly by tracing the evolution of these systems and the evolution of the ideals and theories underlying them, an appreciation may be gained of the social and ethical function of education in the spiritual evolution of the race. This conception of the history of education as a source of professional culture does not fail to include and recognize information as a standard. The history of education, it is claimed, provides information essential to professional self-respect. How, it is asked, can any teacher or educator maintain his professional self-respect unless he has at his command a knowledge of the educational philosophy of Plato and of Rousseau, and unless he knows the more important dates and facts in the rise of educational systems and major classes of institutions. In support of the second aim, it is asserted that by becoming familiar with educational experiments conducted by innovators in times past, educators of to-day may be saved from entering upon similar experiments, or at least saved from making the mistakes made by their predecessors.

Without denying a certain validity to these two aims, and the arguments presented in their behalf, we may well ask, can

[1] Bureau of Publications, Teachers College, Columbia University.

these aims be regarded as essentially professional; moreover, are they adequate? Is the ultimate goal a knowledge of facts concerning different national systems of education, and information regarding theories and experiments evolved by educational pioneers? In the past, under the domination of these two aims, the history of education, although occupying a leading place in teachers' professional training courses, has been taught generally in such a way that neither the teacher nor the students were conscious of its professional bearing. The specific objectives seem to have been to identify certain conceptions, certain principles, and certain facts with particular educators or systems, either ignoring altogether their relation to present school problems or making such a relationship a matter of secondary importance. Educational conceptions and practices have been presented as things in themselves. Ideals and policies of remote civilizations have been more carefully studied than those determining our own. Outlines of school systems and curricula have been memorized as though knowing the five or more steps in the evolution of the Saxony school plan, and having the ability to reproduce in outline the Chinese examination system were matters of vital importance to prospective teachers of arithmetic, mathematics, and manual training. On the assumption that they would be efficacious in increasing the skill of the prospective teacher, the pupil in training has been dragged or driven through infinitely detailed, superficial, and often inaccurate accounts of the child-training systems of as many nations or of as many stages of human culture as the author could crowd into a single volume. The result has been what might well be termed a junk shop species of history of education. Information as an end in itself has no more place in a general professional course in the history of education than it has in a course in arithmetic or in geography. We have discarded junk shop geography; it is high time we discarded junk shop history of education. Let us now ask how this may be done.

During the World War it was discovered that efficient service from our soldiers, and particularly from our officers, necessitated intelligent loyalty. It was not enough that our men should be patriotic; enthusiasm and morale were found to be dependent upon having an understanding of the conditions, forces, and conflicting ideals which had brought about the great international

struggle. In recognition of this, courses were established for prospective officers, dealing with the aims of the conflict and the history of the factors which had produced it. Such courses sometimes bore the title of "War Aims"; elsewhere they bore the title, "Roots of the War." What such courses were to those about to enter military service, the history of education should be to school officers, whether teachers, superintendents, or highly trained specialists. Every educational problem to-day has a history. This is true whether the problem be one of school organization, law, finance, curriculum, or educational theory. It follows, then, that the primary contribution of a professional course in the history of education is that of furnishing prospective educators with an understanding and appreciation of present educational problems by acquainting them with the conditions, the forces, and the ideals which have produced the present educational complex, and the problems which compose it.

It follows that the first task awaiting the teacher of the history of education is to make a careful study of the present educational situation, and to select therefrom such problems as have the closest relation to the future professional work of those to whom the course is offered. The time is undoubtedly at hand when teachers colleges will need, in addition to general courses in the history of education, courses in the history of industrial education, in the history of the curriculum, in the history of special methods, secondary education, administration, and school finance. Having selected the problems to be studied, the next question to be considered is how shall our historical study proceed. Let the history of education begin with the present problem. Let this problem be presented first, with sufficient detail to bring to the student a realization of the significance of the problem and a knowledge of its determining factors. Then let our study show why and how the problem has arisen; this will involve tracing historically the conditions and forces which have produced the present problem or situation. One or two illustrations will suffice to make this method clear. In a general course designed chiefly for high-school teachers, let us begin with a survey of the types of existing secondary schools or systems of schools in the United States and in European countries. In each of these types we will discover that one of the fundamental problems is the reorganization of the curriculum.

We will find in England, in Germany, in Italy, in France, even in Greece, a group styled progressives, demanding that the classics of antiquity be supplanted by current literature, natural science, social and vocational studies. We may at once raise the question, how is it that in a world whose industrial, social, and economic life has for more than three centuries been increasingly dominated by the application of natural science, the curriculum of the secondary school has been almost entirely monopolized by the literature of the ancients, despite centuries of unremitting attacks. This question can be answered only by the history of education. It is the ideal of what constitutes an educated man which is responsible for the long-continued monopoly of classic literature, and the exclusion of scientific, industrial, and social studies. It is because for centuries no man was considered educated without a knowledge of Latin, that Latin came to be so strongly entrenched that it is to-day still regarded by thousands of teachers and by thousands of educated men in other professions as a *sine qua non* of a liberal education.

We may indulge in one or two more illustrations. We hear it repeatedly stated by high-school principals, superintendents of schools, and university presidents that the chief purpose of education is to teach us to think. There is probably not a single institution of higher learning in the United States where a sensation is not created annually, at least once, by some speaker who upbraids the student body for its failure to do independent thinking, and who tries with great impressiveness to drive home to his audience the idea that the educated man is above all things else a thinker. What is the origin of this conception and of educational systems and of the methods of teaching which so stultifies independent thought and intellectual initiative that these annual charges are not only startling, but true? It is the history of education which must furnish the answer. It is the task of the history of education to show that the ability to reason, to do independent thinking, as the ultimate goal of a liberal education arose in Greece as the product of social and intellectual conditions. It was in the intellectual, social, and moral chaos accompanying a period of violent transition that Socrates and his disciples came forward with the declaration that it is the duty of the educated man to think clearly and truly, and that the highest purpose of education is the acquiring of the ability to

think truly on any subject. The history of education will not show merely how the ideal and practices of the liberal education arose in Greece. It will follow the changes in the conception, and in the duties and activities assigned to the liberally educated man from the days of Greece down to the present time.

In like manner, in the field of elementary education, the history of education will attempt to explain and interpret existing movements and standards. In this field we are to-day faced with a multitude of reforms, both within the school and outside the school in society. An analysis of the situation will show that a most potent factor in these reforms is the effort to set up as social and educational standards the immediate needs, interest, and spontaneous activities of children. The significance of these reforms cannot be appreciated without a knowledge of the attitude toward child-life, and of the conditions which prevailed in school and in society prior to the time when Jean Jacques Rousseau formulated and championed that most revolutionary of all modern social and educational standards, child-life. From a study of this standard as expressed in school and social attitudes and practices to the conditions which prevailed in earlier centuries is a long step. Nevertheless, it is the task of the history of education to connect this present with that past, and to show how existing educational and social reforms were not only inevitable but absolutely essential to the progress of society and social institutions.

These aims assigned to the history of education find abundant support in the answers given by teachers of this subject to whom the Carnegie Foundation submitted the question: "What is the specific aim of the course?" The most important answers given to this question were as follows:

1. A more intelligent grasp of educational problems.
2. The present understood through the past.
3. Wider conception of the teacher's work.
4. To give a deeper appreciation and better understanding of our present situation when viewed from a historical standpoint.
5. To give the student the proper historical setting for all educational theory and practice.
6. To interpret and evaluate present educational problems in the light of past school experience.

To these six aims must be added a seventh, namely, to teach

prospective educational leaders to approach educational problems through the avenue of history. It is important that every educator, whether class-room teacher, state commissioner, or college president, should realize the significance of the statement that every educational problem of to-day has its roots in the past, and that it cannot be dealt with intelligently without a knowledge of the situations and factors out of which it has grown. Such a realization, important as it is, is not enough. Those who are to be our educational leaders must, during their period of professional training, be habituated to the method of historical approach. Such habituation cannot be established without definite training in the historical study of educational problems.

It would be interesting, if space permitted, to compare the seven aims just stated with formulations which have appeared in the writings of teachers of this subject in the past, particularly in the introductions of texts on the history of education. Such statements may be found in the works of Graves, Kemp, and others. Had the aims submitted to the authors of the Carnegie Report dominated in the past courses in the history of education, it is altogether probable that the study would have escaped a large measure of the hostile criticism to which it has often been subjected. The history of education has a distinct professional service to perform in connection with the training of educational leaders. Before it can perform this service it must be reorganized both as to subject matter and as to method. Such reorganization must include an elimination of much that has been considered essential in the past, and the adoption of the problem method. It has seemed possible, in summarizing, to reduce the objectives of a course in the history of education to four. They are these:

1. To give through historical study an understanding, appreciation and interpretation of the more important problems, ideals, and factors which enter into the present educational situation.

2. To accustom students to interpret and evaluate present educational conceptions, practices, and standards from the standpoint of the history of these problems.

3. To give an acquaintance with the different avenues of securing historical information.

4. To give definite technical training in approaching educational problems historically.

A BRIEF HISTORY OF MENTAL TESTS

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The writer of this cannot assert any great originality for the material presented, but can merely claim that he has assembled certain facts from a variety of sources and that he has attempted to verify them, to piece them together, and to make continuous and coherent a brief account of some of the more important steps in the train of experiments and discoveries that has resulted in the "intelligence test" of to-day.[1]

To any one at all familiar with the literature, the borrowings from Klemm and from Whipple are very obvious indeed. The additional facts have been seized and appropriated wherever they could be found with the sole idea of getting together in a few pages a compact account that should be as specific and particular as the space would allow.

Whipple describes a mental test thus: "When we speak of a mental test we have in mind the experimental determination for a given individual of some phase of his mental capacity, the scientific measurement of some one of his mental traits." The purpose of the test is "to analyze, measure and rank the status or the efficiency of traits and capacities in the individual under examination. . . . [It] is concerned less with the qualitative examination or structural analysis of mental processes than with the quantitative determination of mental efficiency; it studies mental performance rather than mental content." [2]

From this distinctly modern description, however, back to the earlier mental tests is a lengthy chronicle that involves not only an account of the rise of experimental psychology and psychophysics, but also such varied fields as anthropology,

[1] This article was originally written as a term report, was expanded to serve as the basis of a chapter in Dr. L. E. Bisch's forthcoming volume on *Clinical Psychology*, and is now rewritten again to adapt it somewhat more nearly to the requirements of the average student of educational psychology who is interested in the history and development of intelligence tests and school tests.

[2] Whipple, G. M. *Manual of Mental and Physical Tests.* Baltimore: Warwick and York, 1914, 1915.

astronomy, biometry, and medical jurisprudence. Thus in Roman law different types of insanity were designated by such terms as *demens*, *furiosus*, and *fatuus*. Similarly, as far back as 1325 there was on the statute books of England a law, *De praerogativa regis*, which definitely recognized a state of idiocy, "fatuus naturalis," as distinguished from "non compos mentis." At various times English legal writers have attempted to formulate tests for determining the mental status of persons charged with crime, or otherwise under the observation of the law. Fitzherbert (1470–1538) proposed that as a test of mentality there should be used the "capacity of the alleged idiot to count twenty pence, or to tell his age, or who were his father and mother." Swinburne (1560?–1623) suggested that the person should be examined to see whether he could "measure a yard of cloth or name the days in the week." Coke (1552–1634) observes that "a lunatic person has some times his understanding and sometimes not," a statement which has a good deal more legal significance than at first may appear. In the seventeenth century a legal test that was proposed to determine responsibility for crime was the "level of understanding of a child fourteen years of age." Perhaps the most important of the English standards are the so-called "Rules in Macnaughton's Case" which date from a famous murder trial in 1843. Here the legal issue was whether a person "was capable of distinguishing right from wrong with respect to the act with which he stood charged." All these citations only go to show the very unsatisfactory state of the standard legal tests for mental unsoundness.[3]

Another important chapter in the history of mental tests has been contributed by the anthropologists and by those persons who have endeavored to rate the relative intelligence of various races, and to scale men of talent and genius according to some scientific standards. The consideration of this field would demand a rather thorough discussion of such works as: Galton's *Hereditary Genius* (1869, 1892); *British Men of Science* (1874); Cattell's *American Men of Science* (1903, 1906); Ellis' *British Genius* (1904); and Wood's *Mental and Moral Heredity in Royalty* (1906). These studies raise many interesting difficulties in judging and rating human traits and capacities. In developing a mathematical technique to deal with such problems Galton

[3] See *Encyclopaedia Britannica*, eleventh edition, article, "Insanity."

(1822–1911) was especially active. He is credited by Thorndike with being the first to use "measurements of relative position turned into measurements in terms of units of amount." Cattell has also said of this method that it is the "most convenient tool that we have for constructing educational scales."

To understand further the historical background of the Binet tests and the multitude of more recent intelligence tests and performance scales one must sketch into the perspective some account of the rise of experimental psychology and the introduction of mathematical methods into psychological research, together with the recent development of the technique of biometry.

Psychological measurements really begin with Fechner (1801–1887), but many things must be considered before we can quite understand his place in the matter. Klemm says: "It is certain that there is not one of the methods of psychical measurement that did not exist before the time of Fechner, yet it is only through him that these methods became a recognized part of experimental psychology."[4]

Weber's law (1834) is a landmark in the history of psychological measurements but long before it was established there were many years of controversy and experiment.[5] Almost two centuries before Weber it had been questioned whether psychical conditions and experiences could be measured in exact or mathematical terms. Thus Malebranche (1675) had denied that we could measure mental states and Ploucquet (1763) and Kant (1786) also opposed the notion. In the eighteenth century Wolff had advocated "a science of psychometry" and Eberhard (1776 and 1786) foresaw in "comparison of the value of images . . . a mathematics of the soul"; and while Galuppi (1819) opposed, Eschenmayer (1822) recognized the possibility of "psychical" measurements.

[4] Klemm, Otto. *A History of Psychology*, translated with annotations by E. C. Wilm and R. Pintner. New York: Charles Scribner's Sons, 1914.

From this point up to the 1890 period the discussion is for the most part compiled from Klemm. The reader who wishes to refer to the original sources will find most of them noted in *A History of Psychology*, Ch. IX. It should be observed that the dates given in this article are usually those of publication and do not necessarily coincide with the time of discovery.

[5] Weber's law: "The law or generalization that the least noticeable increase of a stimulus is a constant proportional of the original stimulus." Webster's *New International Dictionary* (1910).

The more immediate preliminary history of Weber's law should include an account of many of the eighteenth century experiments in physics and astronomy as well as psychology, since they were all more or less leading to quantitative results, and to the establishing of exact and scientific methods of work in various other fields of investigation. Lambert (1760) made some of the first quantitative experiments in modern times in visual sensation when he investigated the capacity of the eye for detecting differences in brightness. These experiments brought Lambert very close to the facts underlying Weber's law. Bouguer (1760) also carried on similar inquiries, his so-called "shadow experiment." In 1822 Bessel published his famous investigation of the "personal equation" problem in his examination of the reason for the discrepancy between the star passage observations of Maskelyne and those of his assistant, Kinnebrook, at London in 1795. Steinheil (1837) experimented on light intensities; and Masson (1845), investigating with his "discs," introduced a method for the determination of the "just noticeable difference."

In 1834 Weber made a preliminary statement of the law and in 1846 published *Der Tastsinn und das Gemeingefühl* in which he further discussed his theories concerning the "smallest just noticeable differences of lines and weights."

But the "decisive step leading from all these separate cases to the conception of a new principle was taken by Fechner. In him the older attempts to find a mathematical principle of measurement and the newer experimental methods and ideas meet."[6] In 1860 appeared the famous *Psychophysik*, which for the next twenty years was the center of a battle of attacks and objections that raged around Fechner and his mathematical theories, and which began a controversy that was the principal question in the psychological world from 1860 to 1880. The chief names together with the dates of the more important contributions follow: Aubert (1865); Helmholtz (1867); Mach (1868); J. J. Müller (1870); Bernstein (1871); Plateau (1872); Brentano (1874); Hering (1875); Überhorst (1876); Delboeuf (1873, 1876, 1877); Langer (1876). Fechner's own reply to his critics appeared in 1877.

[6] Klemm, *op. cit.*, p. 242.

Out of all this controversy, however, "arose various attempts at a new foundation of psychical measurement," and as a result there has remained the concept of quantitative methods somewhat as we use them to-day. The principal names of this period are: G. E. Müller, who in his *Grundlegung der Psychophysik* (1878), "a landmark in the history of psychophysics," opposed Fechner for the most part, and Wundt who "took what he considered tenable in the old psychophysics of Fechner and incorporated it into his physiological psychology." Wundt's great work, the *Principles of Physiological Psychology*, appeared in 1874, the second edition in 1880.

The next steps in the transition over to mental tests, as we know them to-day, in general terms were somewhat as follows.[7] About 1890, or a little later, tests began to arouse considerable interest in the United States. Several years later the Germans, especially Kraepelin, became interested in a method of diagnosis for insanity and mental abnormality; and about this same time Binet in France was working on problems arising from a study of individual psychology that resulted in 1905 in his *first series* of tests and in 1908 in his *second series*.

Discussing the events of this period in the more restricted field of educational tests, Ayres has pointed out several interesting and significant details.[8] He says, "We are indebted to Professor Thorndike for the discovery of what is apparently the earliest record of work in the field of educational measurements." The device referred to was that of the Reverend George Fisher of the Greenwich Hospital School, England, who in 1864 used a "Scale Book" which contained "the numbers assigned to each degree of proficiency in the various subjects of examination." This "Scale Book" included specimens of writing, spelling, mathematics, and a variety of school subjects, the different specimens being rated for excellence on a scale of 1 to 5. Interesting as the "Scale Book" is from a historical point of view, it apparently

[7] See the article, "Mental Tests," by E. B. Titchener in the *New International Cyclopedia*.

[8] *The Seventeenth Year Book of the National Society for the Study of Education*, Part II, "The Measurement of Educational Products" (1918). This volume will be found extremely useful. It discusses among other matters the Nature and Methods of Educational Measurements, Statistical Terms and Methods, and Existing Tests. There is also included a very extensive bibliography of which about 440 titles are of books or articles of especial interest to the student of tests and scales.

had little influence on the current of scientific educational ideas.[9]

"In America the real inventor of the comparative test was Dr. J. M. Rice . . . who in 1894 began his investigations of spelling ability." Ayres shows further that the scientific movement in education is "closely related to the survey movement which had its real inception in 1907 in a great social study of the city of Pittsburgh which was termed a *survey*." In 1910 Hanus and Moore made studies of the school systems of Montclair and East Orange and adopted the word *survey* following the example of the social inquiries then current.

To understand the present stage in the growth of the so-called intelligence tests as well as the construction of the Army tests and the Binet-Simon Scale, it is necessary to take up in some detail the various individual elements from which they have been fused and synthesized. The account of these many separate experiments is most conveniently given in the various bibliographies of Whipple's *Manual of Mental and Physical Tests* [10] and for purposes of reference to the sources the simplest procedure is to follow the clear and logical arrangement of the material there presented. Accordingly in detail and following the *Manual*, with several slight additions, a selection of the chief tests, together with a very few of the names of the persons who have worked upon them and the dates of the publication of results, follows.

TESTS OF ATTENTION AND PERCEPTION

Range of Visual Attention. These tests are chiefly those involving the tachistoscope and having to do with the general

[9] The writer would like to call attention to a suggestion of another more famous English schoolman, Matthew Arnold—far better known however as the author of *Culture and Anarchy* and *Sohrab and Rustum* than as a school inspector. Arnold in his essay on *The Study of Poetry* (1880) while discussing the qualities of great poetry and how we may detect that greatness says: "There can be no more useful help for discovering what poetry belongs to the class of the truly excellent . . . than to have always in one's mind lines and expressions of the great masters, and to apply them as a touchstone to other poetry. . . . But if we have any tact we shall find them, when we have lodged them well in our minds, an infallible touchstone for detecting the presence or absence of high poetic quality, and also the degree of this quality, in all other poetry which we may place beside them." Then as examples for this "scale" Arnold quotes certain lines from Homer, Dante, Shakespeare, and Milton.

Here, surely, minus the statistics, is an archetype of our present-day composition scales.

[10] Whipple, *op. cit.*

problem of the psychology of reading. Important work has been done by: Binet (1899), Cattell (1886), Dodge (1907), Erdmann (1898), and Huey (1898, 1908).

Visual Apprehension. This test is similar to the preceding. The contributions of Aiken (1896) and Whipple (1910) should be noted.

The Spot Pattern Test. This test is intended to determine "apprehension of topographic relationship" and correlates rather well with general intelligence. The principal work has been done by McDougall (1908), Burt (1909), and Schuster (1911).

The Form-Board. The form-board is a device to test the ability to recognize and to discriminate between various simple forms such as a circle, a cross, a star, etc. This seems first to have been used by Seguin (1812–1880) in teaching feeble-minded children, but it can also be used to test illiterates. The board as it is now most often met with is the Goddard modification of the Norsworthy design. The chief dates are: Norsworthy (1906) and Goddard (1912).

Cancellation Test. This test has been used by many investigators and in a variety of forms, all of which are in some way a variation of the cross-out method; that is, the object of the test is to cross out some particular letter or symbol. The test was originated by Bourdon (1895). Among the many who have made important contributions are: Cattell and Farrand (1896), Sharp (1899), Binet (1900), and Thorndike (1902, 1905).

TESTS OF DESCRIPTION AND REPORT

Description of an Object. The essential requirement of this test is that the subject shall describe in detail some object such as a postage stamp or a picture. Among the earliest experiments were those of Binet and Henri in 1893.

Fidelity of Report—Aussage Test. This involves the psychology of testimony and the ability of the subject to report what he has seen. Although the first work seems to have been done by Binet (1900) the most important publication has been by Stern (1902). A rather popular account was given by Münsterburg (1908).

TESTS OF ASSOCIATION, LEARNING, AND MEMORY

The tests of this group have led to many and important experiments on account of the very fundamental character of the problems involved.

Uncontrolled Association. The essence of this test is the requirement to write or pronounce an extended series of words not in the form of sentences. The earliest work seems to have been done by Cattell and Bryant (1889) while the most important study is probably that of Kent and Rosanoff (1910).

Controlled Association-Logical Relations. Tests classified under this heading require the giving of a response which is "controlled" or definitely restricted in some way. The most used combinations have been those of *part-whole*, *genus-species*, and *opposites*. Among many reports or word lists are those of Aikins, Thorndike, and Hubbell (1902), Norsworthy (1906), Woodworth and Wells (1911), Simpson (1912), Squire (1912), Pyle (1913), King and Gold (1916), and Wylie (1920, 1921).

Mirror-drawing. In this test the subject traces a drawing, his movements being guided by the reflection in a mirror. Since the mirror reverses the appearance of the various familiar movements the experiment compels the subject to form new associations and thus tests his capacity to learn. There have been many researches, including those of Lochte (1896), Henri (1896), Dearborn (1905), Downey (1908, 1914), Burt and Moore (1912), Yoakum and Calfee (1913).

Substitution Test. In this test one set of letters or symbols is systematically substituted for another, the object of the experiment being to measure the rate at which new associations are formed. Lough and Jastrow seem to have been among the first to use this test. Others who have worked on this problem are: Dearborn (1910), Starch (1911), Baldwin (1913), Pyle (1913, 1915), and Wooley and Fischer (1914).

Rote Memory. Tests of this type demand the reproduction by the subject of a series of impressions in exact order and detail. "A small army of investigators" has worked on this problem and many measurements and experiments have been made to test capacity for recalling not merely words and sentences but also actual objects and pictures, numbers, sounds, etc. The classic experiment is that of Ebbinghaus in 1885. Other important work has been done by Jacobs (1887), Binet and Henri (1894, 1895), Cohn (1897, 1911), Ebert and Meumann (1905), Pohlmann (1906), and Burt (1909, 1911).

Logical Memory. In experiments of this type a reproduction of ideas is required rather than a mere mechanical repetition of

details. Probably the most elaborate study was that made by Henderson (1903).

TESTS OF SUGGESTIBILITY

These tests deal with the various illusions which may be deliberately induced in the subject by experiments involving judgments of size and weight, length of lines, warmth, etc. Among those who have contributed are: Gilbert (1894), Seashore (1895, 1899), Binet (1900), and Guidi (1908).

TESTS OF IMAGINATION AND INVENTION

These tests "are designed both to secure indications of the wealth of spontaneous imagery in phantasy, and to measure capacity for creative or inventive thinking."

Ink Blots. Ink blots are used as stimuli to which the subject responds by stating what "picture" they suggest to him. The first published account was by Binet and Henri (1895). Dearborn, working independently, published in 1897; and other work has been done by Kirkpatrick (1900), Sharp (1899), and Pyle (1913).

Linguistic Invention. Tests of this type are designed to detect ingenuity and creative ability by measuring the capacity of the subject to build up sentences from certain definite elements, to complete sentences of which the beginnings only are given, to invent stories, to develop an assigned theme in writing, and to build up words as in the game of anagrams. Important results have been those of Sharp (1899), Binet and Henri (1895), Masselon (1902), Whipple (1908), Meumann (1912, 1913), and Squire (1912).

Completion Method. In this test the subject completes sentences in which there are systematic elisions. The original form of the experiment was devised by Ebbinghaus about 1897; additional work has been done by Terman and Childs (1912). The completion test is a good deal used on account of its high correlation with general intelligence, the form most often met with being the scale standardized by Trabue (1915, 1916). An interesting pictorial completion test has been devised by Healy (1914).

The Interpretation of Fables. This was suggested as a measure of mental ability by Swift in 1903. Terman and Childs (1912) have also done considerable experimentation.

TESTS OF INTELLECTUAL EQUIPMENT

Tests of this last group are designed to measure what the subject knows rather than what he can do—"to take a census, as it were, of his stock of information."

Size of Vocabulary. This is determined by having the subject define a number of words systematically chosen from the entire range of the dictionary. The test was devised by Kirkpatrick in 1891. Others who have made inquiries are: Ayres (1914), Terman and Childs (1912), Whipple (1908).

Range of Information. As originally devised by Whipple (1909), this was an extension of the Vocabulary Test and attempted to estimate the range of the subject's information by presenting him with a list of terms so chosen that each should be representative of an important field of knowledge or experience. A variation of this test, the Edison "questionnaire," has recently attracted a good deal of popular attention.

The preceding epitome of the principal tests listed by Whipple will at once suggest the wealth of experimental material upon which it was possible to draw in assembling the numerous tests which together make up the famous Binet-Simon Scale and its several revisions.

The first series of the Binet-Simon Scale, consisting of 30 tests, was published in 1905. The second series, extended to 56 tests, appeared in 1908. Goddard first published an account and translation in January, 1910. In September, 1910, and in June, 1911, he added to this by a report of his own experiments with the Scale upon "400 feeble-minded children and nearly two thousand normal children." In April, 1911, Binet published his own latest revision of the Scale. The Goddard "Revision" is dated 1911 (revised in January); the "Stanford Revision and Extension" (Terman), 1915. Others who have worked on the Binet Scale in the United States are Kuhlman, Huey, and Wallin. It is also worth adding in the words of Terman that "Binet was the first to utilize the idea of age standards, or norms, in the measurement of intelligence." Terman further states that this discovery was "perhaps, from the practical point of view, . . . the most important in all the history of psychology."

The work of Terman should be noted not only because of the "Stanford Revision" but also because of his use of the expression

"intelligence quotient" or "I. Q". as it is commonly called.[11] In this he has followed the suggestion of W. Stern's "mental quotient" (1914).[12] As a result, too, of the efforts to improve the Binet Scale there have resulted the Yerkes-Bridges-Hardwick Point Scale (1915), and the Pintner-Patterson Scale of Performance Tests (1917).

To understand fully the modern development of mental tests it is also necessary to revert to the influence of Galton (1822–1911) to whom reference has already been made. Of him Woodworth has said that he "deserves to be mentioned alongside of Wundt as one of the founders of modern psychology. He studied individual differences in imagery and other mental traits . . . introduced modern methods . . . [and] the conception of mental tests."[13] Galton's influence has been marked at least in two directions that should be noted. First, in England, K. Pearson (1857—), Galton Professor of Eugenics, London, has followed and developed his methods, particularly from the mathematical side. Second, in America, Cattell (1860—) who had been for some time an assistant of Wundt, did notable service in founding one of the first psychological laboratories in the United States; and also did much to introduce into this country the conception of mental tests.[14] The name of Jastrow (1863—) too should be mentioned among the earlier workers in this field.

The mathematical technique used in mental tests, which owes so much to Galton, is of extreme importance, but can be given only the barest mention here. The following, however, should be listed: Yule (1910),[15] W. Brown (1911),[16] Thorndike (1904,

[11] Terman, L. M. *The Measurement of Intelligence.* Boston: Houghton Mifflin Company, 1916.

Terman, L. M. *The Intelligence of School Children.* Boston: Houghton, Mifflin Company, 1919.

[12] Stern, W. *The Psychological Methods of Testing Intelligence.* Translated by G. M. Whipple. Baltimore: Warwick and York, 1914.

[13] Woodworth, R. S. *Dynamic Psychology.* New York: Columbia University Press, 1918. (The reader is especially referred to Chap. I.)

[14] *The Psychological Researches of James McKeen Cattell.* Archives of Psychology, No. 30, April, 1914. (In this will be found an extended account of the work of Cattell.)

[15] Yule, G. U. *An Introduction to the Theory of Statistics.* London: First edition, 1910; fifth edition, 1919.

[16] Brown, W. *The Essentials of Mental Measurement.* Cambridge (England), 1911.

1913).[17] Applying the technique which he had learned from Boas in anthropology, Thorndike adapted statistical methods to educational problems. His work is significant, in this country especially, for the reason, as Graves puts it, that he was "probably the first scholar to apply the scientific principles of statistics to education."[18] Ayres comments: "If Dr. Rice is to be called the inventor of educational measurements, then Professor E. L. Thorndike should be called the father of the movement."

In many respects the most important use to which mental tests have ever been put was in rating the men of the National Army during the World War and in classifying them according to their general intelligence. The tests used were largely prepared by the Committee on the Psychological Examination of Recruits which was composed of Yerkes (Chairman), Bingham, Goddard, Haines, Terman, Wells, and Whipple.

The group tests in manuscript already devised by Otis were made the basis of much of the work of this Committee. "Four of the 10 tests in the original Army scale for group testing were taken from the Otis scale practically without change." Among the many psychologists who contributed in one way or another to the problem of classifying personnel in the Army might also be mentioned: Angell, Dodge, Scott, Strong, Thorndike, Watson, and Woodworth.

In addition to the fundamental problem of testing general intelligence special means were devised for rating officers, selecting gunpointers, analyzing the qualifications of successful aviators, and even determining a recruit's probable courage and power of self-mastery under strain.

Between September, 1917 and January, 1919, about 1,727,000 men were examined in groups of from 75 to 500 by means of two systems of tests, "Alpha" and "Beta." Each of these required about fifty minutes for the examination of the entire group. The Alpha was designed for men who could read and write English; and the Beta was adapted to illiterates and to foreigners, and was ingeniously arranged so as to be given entirely by pantomime and demonstration. In some 83,500 special cases a third type of test, individual, was given to those recruits who had

[17] Thorndike, E. L. *An Introduction to the Theory of Mental and Social Measurements.* New York: Teachers College, Columbia University, 1913 (second edition).

[18] Graves, F. P. *A Student's History of Education.* New York: Macmillan Co., 1916.

failed in the group tests. The magnitude of the work of the psychologists and of the importance of intelligence testing is indicated by the statement that nearly 2,000,000 psychological record cards were returned from the Army camps to the Office of the Surgeon General.[19]

The Army Tests demonstrated so thoroughly the worth and reliability of the group intelligence test that we now have available a number of different forms by various investigators. Some of the better known tests together with the dates are those of: Otis (1918), Pressey-Pressey (1918), Thorndike (1919), Thurstone (1919), Whipple (1919), Dearborn (1920), Haggerty (1920), Monroe and Buckingham (1920), Terman (1920), and Trabue (1920). The most elaborately devised series is that known as the National Intelligence Tests (1920). These tests were prepared under the direction of the National Research Council and are the joint production of Haggerty, Terman, Thorndike, Whipple, and Yerkes.

Another interesting development of tests has been the adoption of the psychological examination for college entrance at Columbia, Brown, Rutgers, and elsewhere.[20] For this new application Thorndike has been largely responsible, although historically a direct line might be traced as far back as the tests employed by Cattell at the University of Pennsylvania in 1890 and later by him at Columbia University beginning in 1894.

A somewhat similar use of tests has also been made in the selection of employees and executives for business and industry.

[19] For a detailed account of the nature and history of the Army Tests consult the truly monumental report edited by Robert M. Yerkes and entitled, *Psychological Examining in the United States Army*, Memoirs of the National Academy of Science, Vol. XV, Washington, D. C., 1921. This volume is simply indispensable to any one interested in the subject. For a briefer account see (especially Vol. 2, Chap. X) *The Personnel System of the United States Army*, C. C. P. 399 and 400, 2 volumes, Washington, D. C., 1919.

These works can be obtained from the Superintendent of Documents, The Government Printing Office, Washington, D. C.

The most convenient reference for the general reader is the volume by C. S. Yoakum and R. M. Yerkes: *Army Mental Tests*. New York: Henry Holt and Company, 1920.

[20] Jones, A. L. "Psychological Tests for College Admission." *Educational Review*, November, 1919.

Thorndike, E. L. "The New Psychological Tests." *Educational Review*, February, 1920.

Hawkes, H. E., and Jones, A. L. "On the New Plan of Admitting Students at Columbia University." *Journal of Educational Research*, September, 1921.

Many of these tests are adaptations of those already mentioned, supplemented by special devices designed for the particular trade or business. The work of the following might be mentioned as illustrative of the methods used: Hollingworth, Link, Münsterberg, Scott, and Thorndike. In the note below will be found a selection of the references most likely to be useful.[21]

Since a large part of the impetus for test making has come from educational sources a few of the better known school tests and scales should be mentioned even though in some cases they may not strictly conform to the requirement of being "mental tests" and nothing more.

This list is of course far from exhaustive and is included largely for its historical interest.

Among the more widely known school tests and scales are those in:[22]

Arithmetic—Stone (1908); Courtis (1910); Woody (1916); Woody-McCall (1919); and Monroe.

Algebra—Childs; Hotz (1918); Monroe (1914); and Rugg and Clark (1917).

Geometrical Ability—J. H. Minnick (1918).

Mathematical Ability—Rogers (1918).

Language—Starch; Hanus (1916); Henmon; and Charters. (The completion and vocabulary tests have already been noted.)

Reading—Thorndike (1914); F. J. Kelly (1915); Starch (1915); Haggerty (1917); Haggerty and Noonan (1920); Burgess (1920); Thorndike-McCall (1920); Monroe; Gray (1917); and Courtis.

Spelling—Buckingham (1913); Starch (1915); Ayres (1915).

Handwriting—Thorndike (1910); Ayres (1912); Freeman (1914); and Gray (1915).

[21] Hollingworth, H. L., and Poffenberger, A. T. *Applied Psychology*. New York: D. Appleton and Co., 1917. See especially Chap. 11, 12, and 13.

Hollingworth, H. L. *Vocational Psychology*. New York: D. Appleton and Co., 1916. (See especially Chap. 3.)

Link, H. C. *Employment Psychology*. New York: Macmillan, 1919.

Münsterberg, H. *Psychology and Industrial Efficiency*. Boston: Houghton Mifflin Co., 1913.

Scott, W. D., and Hayes, M. H. S. *Science and Common Sense in Working with Men*. New York: The Ronald Press Company, 1921. See especially Chaps. 3, 4, and 5.

[22] Many tests have been published without a date and consequently in a few cases no authoritative year has been assigned. As a rule the earliest date of publication has been given, but no attempt has been made to list later editions or revisions. In the absence of other information the date of a test has been given as that of the date of copyright, although this may not always coincide with the year in which the test first appeared.

Drawing—Thorndike (1913).

English Composition—Hillegas (1912); Harvard-Newton (Ballou, 1914); Thorndike (Extension of the Hillegas Scale, 1915); Trabue (Nassau County Supplement to the Hillegas Scale, 1917); Hudelson (1921); and Willing (1918).

Besides the above there are several other tests and scales which do not fit readily into any of the above classifications. Included here are: Exercises in the Appreciation of Poetry by Abbott and Trabue (1920); Tests for Mechanical Ability by Stenquist (latest edition, 1922); an Individual Will Temperament Test by Downey (1921); the Upton-Chassell Scale for Measuring Habits of Good Citizenship (1919); and the Voelker Scale to test morality and trustworthiness (1921).

In conclusion attention should be drawn to several studies of a somewhat varied character that are of interest and significance to a student of mental tests.[23] These include: *Studies in the Physiology and Psychology of the Telegraphic Language* by Bryan and Harter (1897–1899); *The Correlation of Mental and Physical Traits* by Wissler (1901); *Racial Differences in Mental Traits* by Woodworth (1910); *Educational Guidance, An Experimental Study in the Analysis and Prediction of High School Pupils* by T. L. Kelley (1914); *Ventilation in Relation to Mental Work* by Thorndike, McCall, and Chapman (1916); *The Distribution and Relations of Educational Abilities* by C. Burt (1917); and *The Psychology of Musical Talent* by Seashore (1919).

[23] The following books will be found useful, especially for school tests: Thorndike, E. L. *Educational Psychology*. Vol. III, Part II, "Individual Differences." New York: Teachers College, Columbia University, 1914.

Monroe, DeVoss, and Kelly. *Educational Tests and Measurements*. Boston: Houghton Mifflin Company, 1917.

Starch, D. *Educational Psychology*. New York: Macmillan, 1919.

Wilson and Hoke. *How to Measure*. New York: Macmillan, 1921. See especially Chap. X, "The Measurement of General Intelligence."

McCall, W. A. *How to Measure in Education*. New York: Macmillan, 1922.

Attention is also called to the following: Mitchell, D., and Ruger, G. J. *Psychological Tests, Revised and Classified Bibliography*. New York: The Bureau of Educational Experiments, 1918. This consists of 1428 entries concerning tests and will be found very convenient.

For current psychological literature see *The Psychological Index*, published annually, and *The Psychological Bulletin*. The Psychological Review Company, Lancaster, Pa., and Princeton, N. J.

For educational tests consult also the files of the *Journal of Educational Research*, *The Journal of Educational Psychology*, and the United States *Bulletin*, issued by the Bureau of Education, *Monthly Record of Current Educational Publications*.

SOME APPLICATIONS OF OUR NEWER KNOWLEDGE OF NUTRITION

By MARY SWARTZ ROSE
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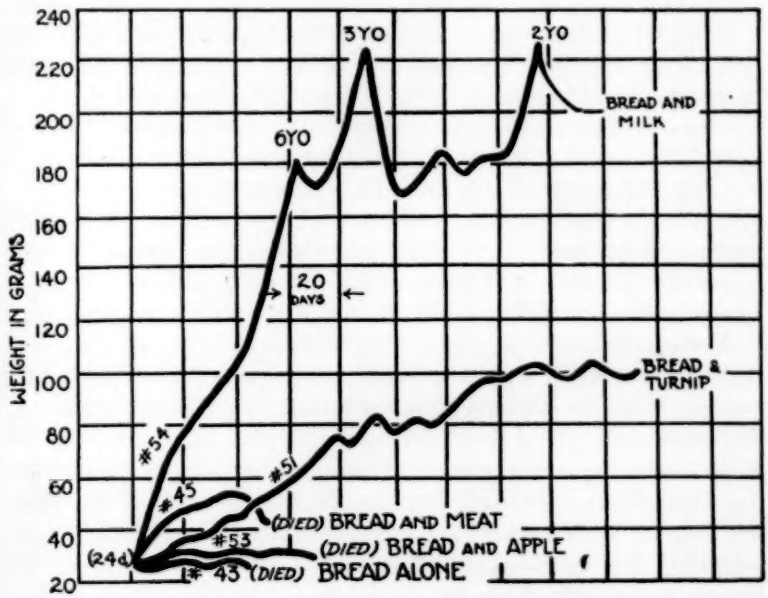
We are told that in the northernmost region of India, high up in the Himalayas, there is a state called Hunza. Here an isolated people have subsisted for generations upon a frugal diet—the grains which they grow (wheat, barley and maize), an abundance of apricots which they sun-dry for winter use, vegetables, and goat's milk. Goats are the only live stock, and while butter is made from the milk, goat's meat is eaten only on feast days. Dr. McCarrison, of the British Medical Service in India, reports that in seven years of residence in this state he had occasion to treat mostly accidental lesions, senile cataract, and other maladies wholly unconnected with the question of the food supply. Is this high state of public health to be directly correlated with diet?

Until a few years ago there was no very convincing way of explaining why diets apparently alike in nutritive properties, as then known, did not prove equally successful when put to the test of practical experience. In 1912 came the report of a long experiment. [1][1] Cattle were fed for three years rations alike in all the known dietary essentials, but derived from different plant sources. This experiment, now a classic in nutrition literature, gave convincing proof of individual differences in the diets used. Animals fed a ration derived exclusively from the corn plant remained vigorous and had vigorous offspring; those fed exclusively on the wheat plant deteriorated, and their offspring were few and feeble, often stillborn. Difference in diet was the only possible explanation of difference in results.

This was an expensive demonstration but it helped to lead the way toward the full development of a satisfactory method of testing the nutritive properties of foods and explaining their different effects. It was seen that animals which could be studied

[1] The numbers in brackets refer to the bibliography at the end of the article.

from generation to generation must be used experimentally to get a true perspective on the influence of diet. Hence the quickly growing, omnivorous and prolific white rat, living healthily in restricted quarters, became within a short time a "standard laboratory reagent" in nutrition. For the long span of human life, giving little perspective on factors operating as slowly and subtly as those in diet, we substitute a life only one-thirtieth as long, one day in the life of a rat being as one month in the life of



Courtesy of Professor H. C. Sherman

CHART 1. Showing results of feeding bread alone, bread and meat, bread and apple, bread and turnip, or bread and milk to young rats of the same litter.

a man, one year as thirty years. In a few weeks we may know whether a given diet is doing good or harm, and in a few months we may behold the progress of families through several generations. Chart 1 shows how quickly the rate of growth is affected by diet. [2] Bread alone, bread and apple, bread and meat, were none of them able to support life for more than a few weeks. Slow growth for some time was possible on the bread and turnip diet, but there was no reproduction. With the bread and milk diet there was normal growth and early reproduction, but none

of the young survived. In this case the diet consisted of one-sixth whole milk powder and five-sixths white bread. In later experiments Sherman [3] has shown that increasing the milk to one-third and decreasing the bread to two-thirds makes a ration on which young can be reared successfully, particularly if the white bread is replaced by ground whole wheat. Thus diets seemingly equally good for adults may prove quite inadequate for bearing and suckling young, or these processes may be carried on at undue cost to the mother.

Analysis of the factors in diet responsible for such differences has led not only to the recognition of three vitamins as essentials in nutrition, but to many other interesting observations, one of the most important of which is that shortage of any single dietary essential is detrimental to the nutritive process as a whole. The old idea of a balanced diet must be enlarged, many of our experiences of the past must be reinterpreted, and some of them reinvestigated because of this new knowledge. In this article an attempt will be made to point out briefly some of the newer work bearing on relationships of dietary essentials to one another.

A short time ago a young woman schooled in nutrition had occasion to consult a dermatologist. A diet was prescribed which brought forth the inquiry, "But where does one get one's calories?" The reply was, "Oh, I don't believe in calories. Some people need them and some people don't." It reminds one of Maude Adams and Peter Pan. Do we still have to come to the front of the stage and inquire before we go on with the play, "Do you believe in calories?" In Vienna Pirquet has employed systematic calorie feeding to relieve the undernutrition of the children resulting from the war. "Each dining room supervisor requisitions exactly the number of grams [the metric system holds in Vienna] and nem [Pirquet's calorie unit, one nem being 0.67 calorie] prescribed in total for her children. The children file in and each presents a card indicating the results of a previous physical examination and the number of nem [calories] prescribed for him. Serving ladles are standardized in size and so labeled that it becomes an easy matter to dispense any given number of nem [calories] of food. After his ration is given him, the child sits at a table and eats his meal. . . . He is not permitted to leave the room till his plate is emptied. This rule is insisted upon and unless a child is obviously ill he is compelled to eat his entire prescribed ra-

tion." [4] Without a full energy supply no other dietary essential can function effectively and undernutrition results. Lusk, reviewing the physiological effect of undernutrition, writes: "Fatigue comes on more quickly than usual. Not only is there a decrease in the muscular efficiency of paid laborers but also in people leading sedentary lives. The muscular activities which are concerned in the normal preservation of health become restricted. The love of roaming and of sport is lost. Children cease to play, and a person evades as far as possible all bodily exertion. The same apathy is true as regards mental work. As the mind becomes depressed muscular movements become slow and listless. . . . The human body has no means of economizing energy for the production of work when work is done after emaciation and during undernutrition." [5]

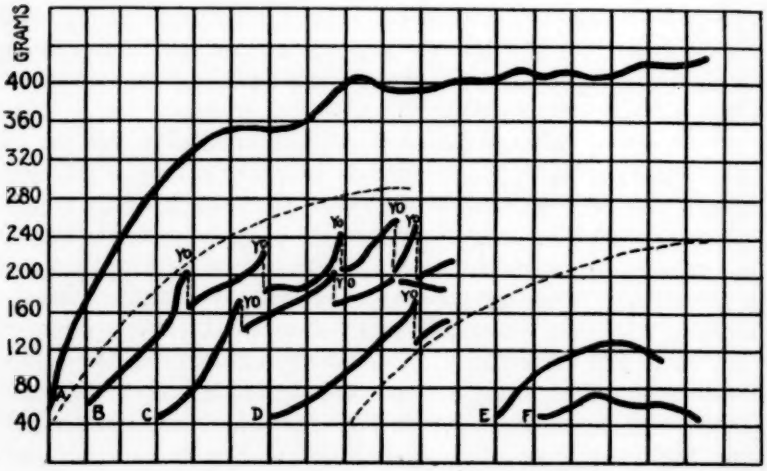
Shortage of calories conspicuously affects the utilization of the protein supply. In Friedrich Muller's clinic in Munich fifteen medical students on the official food ration of Germany, containing 1600 calories and 60 grams of protein, lost nitrogen at the rate of 2 grams per day. With the addition of 500 calories in the form of milk sugar, the loss of nitrogen ceased, thus demonstrating that it was due to the energy shortage. [5] Very recently, too, Hart and Humphrey [6] have shown that in cattle a diet which resulted in nitrogen loss when approximately 14 therms (one therm equals 1000 calories) per 50 pounds of body weight were fed, would maintain nitrogen balance when the same amount of nitrogen was fed with 17 therms per 50 pounds.

The marked influence of a high energy intake on the conservation of body protein is strikingly shown in typhoid fever. In 1909 Coleman and Shaffer [7] proved that by the use of diets of high fuel value, especially when rich in carbohydrate, the terrific loss of body protein, so characteristic of the disease, is preventable. This knowledge has greatly changed the dietetic treatment of typhoid.

DuBois [8] has studied the increase in energy expenditure brought about by fever in general and has demonstrated that this rise follows Van't Hoff's law that chemical reactions increase in velocity in direct ratio to rise in temperature. We may now predict an average rise of 13 per cent in basal metabolism for each degree Centigrade above normal body temperature. Adding allowances for influence of food, restlessness, and the presence

of toxins, the total energy requirement is raised 40 per cent or more above that of a healthy normal man at rest in bed without food in the alimentary tract.

Regarding proteins, it is now generally known that they are not individually of equal value in nutrition; some will not by themselves meet the body demand for a certain assortment of amino acids, being deficient in one or more which the body cannot synthesize; others will fulfill the protein needs of adults but lack certain requisites for normal growth. In properly chosen



Courtesy of Professor E. V. McCollum

CHART 2. Showing results of feeding a diet in which the protein was derived from maize, potatoes, and casein (cases A, B, C, D) in contrast to one in which the protein was derived from maize and potatoes only (cases E and F).

mixtures of proteins the deficiencies of one may be made good by surpluses of another, so that the final product is satisfactory. This is illustrated by Chart 2. [9]

This chart shows first the results of feeding young rats a diet in which the protein was derived from maize, potatoes, and casein. Curve A represents a male and curve B a female, and the dotted line between them the curve of normal growth for rats. The vigor of the male is attested by his fine growth curve, surpassing the normal average; that of the female by her five litters of young, and by the fact that her descendants of the second generation (note female C of the second generation) and of the

third generation (note female D of the third generation) were able to bear and rear young. The remaining two curves of the chart (curves E and F) are of a male and female that started out under equally auspicious circumstances, but were fed a diet in which the protein was derived solely from maize and potato. Lacking the casein, there resulted little growth, an early decline, and no descendants. It is thus evident that the mixture of proteins from maize and potatoes is not as efficient for growth and reproduction as these same proteins supplemented by the casein of milk. Random mixtures, therefore, do not necessarily yield good results. McCollum [10] has also recently shown that mixtures of seeds used as sources of proteins are not as efficient for growth as mixtures of seeds supplemented by milk, muscle tissue, liver or kidney; and that the proteins of muscle, liver, and kidney are more valuable when combined with cereal proteins than when fed alone. Such knowledge is useful in arranging the economical dietary, which is high in cereal products. For the adult human subject Sherman [11] and some of his associates have shown that it takes only a little supplementing with milk to make the proteins of corn, oats, and wheat highly efficient in maintaining nitrogen equilibrium.

The main functions of the vitamins are too well known to need reviewing here. These are the most amazing factors in diet just now—so long unsuspected, so minute in quantity, so elusive to the chemist, so far-reaching in their influence. That their absence results in failure of the young to grow, and in development of definite pathological symptoms is well known. Their more subtle aspects are just beginning to be appreciated.

Of the three vitamins known, the body is apparently able to store a reserve of only one, the "A" vitamin. When the body reserves of this vitamin become depleted, the animal shows increased susceptibility to bacterial infection; and this lowered resistance results in a large proportion of subjects developing eye disease (xerophthalmia or keratomalacia) which disappears promptly upon administration of the vitamin. The well-known observations by Mori in Japan, Bloch in Denmark, Wells in Roumania, and Dalyell in Vienna, of cases of eye disease occurring in children as a result of undernutrition due to food shortage and cured by such sources of the vitamin as chicken livers, whole milk, and cod liver oil, impress the importance of an adequate

supply of food rich in vitamin for human welfare. McCollum has suggested that the night blindness of northern regions may be due to deficiency of this vitamin.

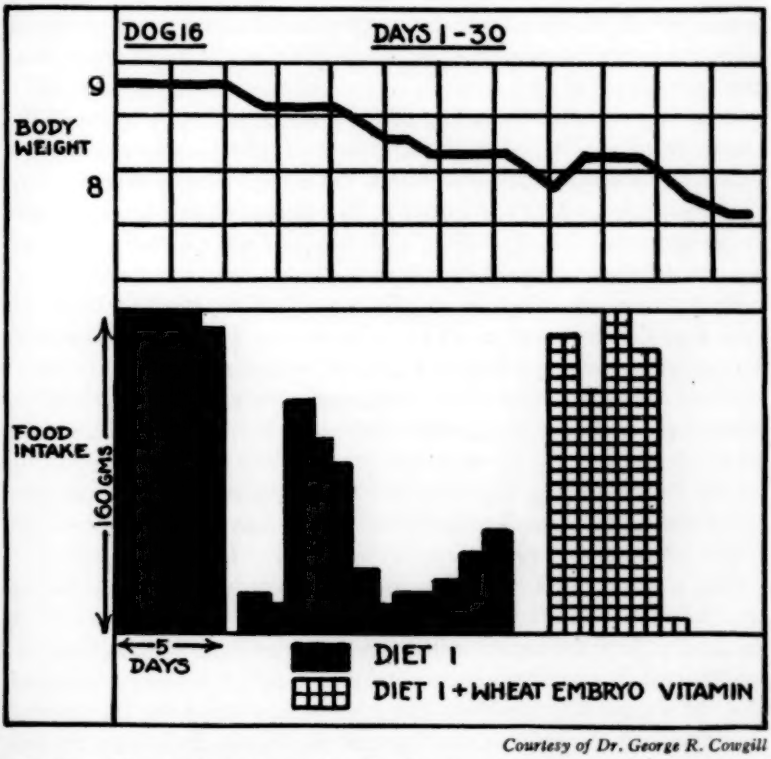
Lack of the "A" vitamin may lead to weakness or abnormality of other tissues besides those of the eye. Diminished appetite and diarrhea have frequently been noted in animals from which it has been withheld. Osborne and Mendel [14] have called attention to the frequent occurrence of phosphatic renal calculi in rats deprived of it. Susceptibility to such diverse diseases as tuberculosis, pellagra, and rickets is correlated with deficiency in this dietary essential. Before we knew about vitamins we used to talk about "feeding for resistance" with such foods as cream, butter, eggs, cod liver oil; to-day we know these foods to be rich in the "A" vitamin.

A liberal supply of the "A" vitamin seems to be essential to successful reproduction. Animals apparently normal themselves will remain without offspring on diets deficient in the vitamin, and will begin to have normal families when the vitamin is supplied. Reynolds and Macomber [15] have found in colonies of rats of known heredity and breeding chances many more sterile matings when the "A" vitamin has been withheld from the diet, and think they have evidence of the same thing happening in some human cases.

The "B" vitamin is neither synthesized nor to any extent stored in the animal body. Hence shortage very quickly results in pathological symptoms or retarded growth. It seems to be a profound physiological stimulant. Deficiency of both "A" and "B" vitamins appears to be more serious if it is accompanied by a liberal supply of energy. McCarrison says that a degree of vitamin deficiency which will produce a definite train of symptoms in the presence of an excess of starch will produce the same set of symptoms twice as fast if there is also an excess of fat. [16] It is suggested that in some way the vitamin exercises a regulatory effect upon the oxidative processes. Dutcher [17] offers as evidence in this respect the reduction of catalase content of the tissues which he has observed in polyneuritic pigeons. McCarrison thinks that it plays some part in the nuclear metabolism.

It seems well demonstrated that the "B" vitamin has a marked effect upon appetite. Cowgill [18] has shown that the dog will develop a fitful appetite, insufficient to maintain body weight,

on a diet adequate in all respects except this vitamin, though taking the diet well at first. When the "B" vitamin is administered after such appetite failure, quite apart from the food, the animal again eats normally of the same diet which he before



Courtesy of Dr. George R. Cowgill

CHART 3. Showing loss of appetite of a dog on a diet lacking only in the "B" vitamin, and recovery of appetite upon administration of the vitamin.

rejected. This is illustrated in Chart 3, in which the solid black part represents the intake on the diet without the "B" vitamin. For the first five days the intake was up to the animal's requirement; then a day was skipped, followed by several days of poor intake, partial recovery of appetite, a fall again, a poorer recovery, and finally two days without taking any food. At this point "B" vitamin was administered, and the checked block represents the subsequent food intake, a nearly normal appetite developing at once.

This emphasizes the importance of the "B" vitamin not only for its own specific effects but also for its influence upon the whole food intake, and leads to interesting speculations in regard to the well recognized appetizing qualities of "spring greens." If we use "spring greens" all winter can we maintain a "spring" appetite? Is it paradoxical to say that a green vegetable will increase appetite though a person may regard it as not "appetizing" at all?

The reproductive capacity of animals is regularly lowered by shortage of the "B" vitamin, and in individual cases atrophy of ovaries and testes has been shown to be the cause of sterility.

According to McCarrison [16] "B" vitamin starvation results in impairment of digestion, enlargement of adrenals, loss of weight in thymus, testes, spleen, ovary, pancreas, heart, liver, kidney, stomach, thyroid and brain. Without the "B" vitamin, cells function on a low plane and the entire organism deteriorates. Hypertrophy of the adrenals has been remarked by other investigators. While some of these points await confirmation, there is, however, no doubt of the widespread influence of this vitamin in the body.

The "C" vitamin, like the "B" vitamin, is not stored in the body, except perhaps in case of the rat, in whose liver it has been found after long deprivation. This capacity for storage, coupled perhaps with a low requirement or an ability to utilize forms which other animals cannot use, may explain the rat's immunity to scurvy. [19] But even in the rat better health, higher stamina, and better disposition are said to be induced by the presence of the "C" vitamin in the diet. Hess has pointed out the prevalence of sub-acute scurvy in infants, and has made us keenly appreciative of the fact that general symptoms of undernutrition and anemia may be the first signs of deficiency of this vitamin. Howe [20] of the Forsyth Dental School in Boston has shown most strikingly the degeneration of teeth and jawbones in guinea pigs suffering from vitamin deficiency; and what is perhaps more remarkable, the regeneration of bone, which may be observed in the jaw when the vitamin is restored to the diet. Similar observations have been made by Zilva and Wells [21] who find the teeth one of the parts of the body first to be affected by any shortage of vitamin "C." While no one would minimize the importance of cleanliness in the care of good teeth, the

chances of having good teeth to take care of depend very intimately upon diet. Long before symptoms of acute scurvy appear great damage may have been done to the teeth.

Hypertrophy of the adrenals seems to accompany deprivation of the "C" vitamin [16] as well as the "B" vitamin, and it is suggested that the typical hemorrhagic lesions may have some connection with diminished adrenalin production.

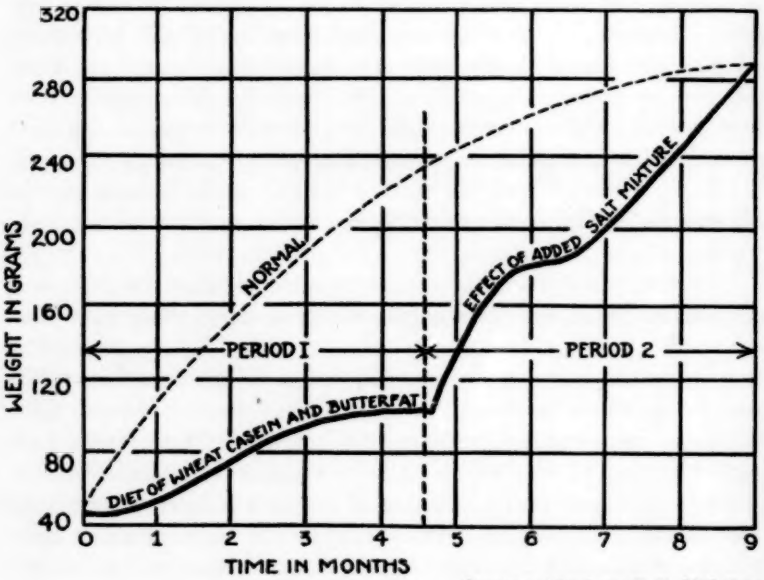
"The place of vitamins in human economy must be considered in connection with the metabolism as a whole; in connection with their relation to other essential food requisites; with their relation to organs of digestion and assimilation; and with their relation to endocrine regulators of metabolic processes," writes McCarrison. "Vitamins are the sparks which ignite the fuel mixture of a petrol-driven engine, liberating its energy; a spark of no use without fuel, nor fuel without spark—nay more, *the efficiency of the spark is dependent in a great measure on the composition of the fuel mixture.*"[1]

Therefore we must not, because these viewpoints are new and somewhat startling, disregard other dietary essentials less spectacular, such as the mineral constituents. The developments with regard to some of these are little less impressive than those concerning the vitamins. Withholding any one of the ash constituents will interfere with normal growth. McCollum's [22] demonstration of the inadequacy of a ration of cereal food because of its lack of sodium, chlorine, and calcium is fully convincing. The growth curve of an animal on a diet of wheat with its protein made adequate through the addition of casein, and its shortage of the "A" vitamin made good by butter, shows that this diet does not support normal growth; whereas upon the addition of a suitable salt mixture, improvement is noted at once. This is illustrated by Chart 4.

The effects of any lack of a mineral element are not always evident in a short period of time. This is illustrated by some experiences of Meigs and Woodward [23] with dairy cows. The cows were fed for four years according to the most liberal of American feeding standards and account was kept of the milk production. Chart 5 gives a typical example of what happened. By the fourth year the milk had fallen to less than half the optimum, though the cow had maintained good health all the

[1] Italics the writer's.

time. It was then found that by feeding for 60 days or more before the calf was born a much more liberal ration, the milk yield could be greatly increased, as is indicated in Chart 5 by the yield for the fifth year, in which this cow surpassed her former optimum and more than doubled her production of the previous year. Further study of the situation developed the view that it was not a general deficiency of the ration but a shortage of phosphorus or calcium or both that was responsible



Courtesy of Professor E. V. McCollum

CHART 4. Showing the improvement in rate of growth when a diet adequate except as regards mineral salts is supplemented by a suitable salt mixture.

for the decline. The animals were then fed rations of grain, alfalfa, hay, and corn silage supplemented with sodium phosphate. This ration was high in both calcium and phosphorus. Four experimental animals gave on the average 37.9 per cent more milk than would have been expected from their previous records.

Experimental work on rickets has lately brought into prominence the question of relationships among calcium, phosphorus, and some organic factor in the diet, possibly the "A" vitamin. Cod liver oil has been shown to increase markedly the storage

of calcium in rachitic children [24], and the roentgen ray has revealed the actual calcification of bone going on under the influence of the oil. The amount of inorganic phosphorus in the blood plasma also seems to be increased by it, and this according to Howland and Kramer [25] accounts for the deposition of calcium in the bone. The influence of some organic factor is noted by Hart and Steenbock [26] who report that milking goats are "readily brought into negative calcium balance on a ration of air-dried grains and air-dried straw. But when the dry cereal straw was displaced by an equivalent in dry matter of

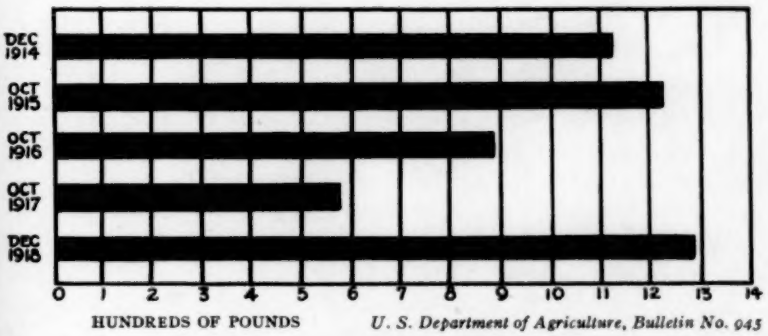

DEC 1914
OCT 1915
OCT 1916
OCT 1917
DEC 1918
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14
HUNDREDS OF POUNDS
U. S. Department of Agriculture, Bulletin No. 945

CHART 5. Showing a cow's milk production by years for five years, the first four years on a good standard ration, the fifth year on a more liberal ration for the last 40 days before calving and with a longer dry period.

fresh green material with no increase in the total calcium intake, the negative calcium balance was almost wiped out."

McCollum and some of his co-workers [27] observed that the relative amounts of phosphorus and calcium are more significant in producing or curing rickets than the absolute amount of either; and Sherman [28] and Pappenheimer have shown that rickets can be induced in rats by a ration consisting of white flour, calcium lactate, sodium chloride, and ferric citrate, and prevented by the addition of potassium phosphate. Efforts to increase blood and tissue calcium by feeding calcium compounds have generally been unsuccessful, and such feeding of calcium does not promote calcification of bone except after a real calcium shortage. Evidently the situation is not a simple one, and until better understood it is well to remember that cod liver oil is a specific for rickets, and that sunshine seems to be curative also.

Other interesting relationships between calcium and phosphorus are connected with the question of the ease with which milk is digested by infants. Bosworth [29] points out that the caseins of cow's and human milk are identical, reacting as acid, and forming salts (caseinates), some of which coagulate in the presence of rennin while others do not. Coagulation is promoted by soluble calcium salts (richly present in cow's milk) and retarded or prevented by soluble salts of sodium and potassium (found more plentiful in human milk). Acidity favors coagulation, and strictly fresh cow's milk, according to Bosworth, does not coagulate with rennin. Hence he advises pasteurizing cow's milk for babies the instant it comes from the cow.

The importance of iron in nutrition has long been recognized, and questions as to factors influencing its utilization keep arising because the body carries little reserve of iron, and is dependent in a high degree upon the daily supply. Whipple and Robscheit [30] have been conducting extensive experiments in blood regeneration in anemia due to hemorrhage, and find blood regeneration not much influenced by the ordinary medicinal forms of iron, while iron in food exerts a distinctly favorable influence.

Animal experimentation has shown how easily individuals may fail to realize their full physical possibilities through various deficiencies in diet. We begin to appreciate more keenly the importance for any race or nation of a dietary program which is favorable to its best development, and also of an educational program which points out the virtues and deficiencies of staple articles of food in the national dietary, and thus leads to intelligent practice.

Cereals are the great source of economical fuel. They are also an important source of protein, though the protein requires some supplementing. It is interesting to note that in 224 American dietaries analyzed by Sherman, although liberal meat consumption is characteristic of America, the grain products contributed 37 per cent of the protein, as compared with 35 per cent from meat and 15 per cent from eggs and milk. The cereals may also be an important source of iron. Even in the dietaries referred to, in which meat might be thought likely to be the main source of iron, the cereals contributed 26 per cent of the iron, vegetables the same, and meat only 30 per cent—little over one-third of the total. [31]

Green vegetables have come to be regarded much more highly since our more recent knowledge of vitamins and ash constituents. McCollum calls them "protective foods," making good the deficiencies of a "meat-potato-bread" dietary. They are now introduced quite generally into the diet of the young child by the sixth month, to be used daily thereafter. The tomato, too, has come into its own as a good source of all three vitamins. As an antiscorbutic it vies with orange juice, and has found its way into the diet as early as the third month in the case of artificially fed infants. The humble carrot has proved a good source of vitamins "A" and "B," and its ease of digestion and economy commend it for the diet of young children. When the babies of to-day grow up there will be undoubtedly less need for the education with regard to vegetables which is going on in our nutrition classes for children at the present time.

The most conspicuous contribution of fruit to the dietary is the "C" vitamin, partly because of a good initial supply, and partly because there is less destruction of the vitamin by cookery. Fruits are eaten raw, and if cooked the acidity helps to protect the vitamin from oxidation. Fruits are also valuable for their supply of "B" vitamin and their laxative properties.

One of the most interesting of these changes in our estimate of the value of different foods, is that in regard to meat and milk. When Hopkins showed that animals not thriving on a ration of purified food materials could be brought into condition by adding a little milk to the diet; when Osborne and Mendel found that proteins not adequate for growth could be made adequate by adding a small amount of protein-free milk; when McCollum demonstrated that milk sugar as ordinarily prepared carried something from milk which was essential for growth; when Sherman showed that the storage of iron on a bread and milk diet was remarkable considering the small quantity of iron in milk; when Hart and Humphrey showed the great value of milk as a supplement to the proteins of the grains in milk production, the "score" for milk began to go up at a surprising rate. It has come to be considered our greatest "protective food," since it makes good deficiencies of the diet in so many directions. Sherman and Muhlfeld [3] have just reported a series of feeding experiments with two diets, one consisting of one-sixth whole milk powder and five-sixths ground whole wheat, the other of one-

third whole milk powder and two-thirds ground whole wheat. On both diets young can be successfully reared, as has already been shown, but by following these groups through a number of generations it appears that with the larger proportion of milk in the diet there were more young produced by the mothers; a greater number of young successfully suckled with less cost to the mothers, as shown by better maintenance of body weight while suckling the young; a better rate of growth among the offspring; and a more economical utilization of the calories of

TABLE SHOWING THE NUTRITIVE RETURN IN "LOW-MEAT," "MEDIUM-MEAT" AND "HIGH-MEAT" DIETARIES (SHERMAN)

Per Man Per Day	Low-Meat Dietaries (49 Cases)	Medium-Meat Dietaries (127 Cases)	High-Meat Dietaries (48 Cases)
Cost	0.25	0.25	0.24
Calories	3821	3195	2822
Protein, grams	103	108	107
Phosphorus, grams	1.75	1.63	1.48
Calcium, grams	0.89	0.77	0.55
Iron, grams	0.0182	0.0181	0.0170

the food consumed in the rearing of the young to weaning age. Advice to make milk the backbone of a child's diet is sometimes viewed with distrust, but if milk is properly supplemented there is weighty evidence that it is the best kind of insurance of good growth and maintenance of well-being.

Meat, on the other hand, we have come to think of as one of the foods which may be most easily dispensed with so far as actual nutriment is involved. This applies particularly to muscle tissue, the part of animals most widely consumed. Muscle tissue is a relatively poor source of vitamins and calcium; its proteins, while good, have not so far been shown to be as efficient supplements of the ordinary diet as those of milk. The following figures, furnished by Professor Sherman [31] from his analysis of 224 American dietaries, tend to show the influence of investment in meat upon the nutritive return from the diet as a whole. When approximately the same amount of money was spent in "low-meat," "medium meat," and "high meat" groups, the return was

better on the "low" and "medium" than on the "high," at all points save protein, and even here, strangely enough, it was no higher on the high-meat diet.

This does not mean that meat should be discarded, any more than other foods which give variety and palatability to the diet, but that it should not be depended upon too much. In laboratory feeding it has proved a poor substitute for milk, even when at first it seemed to stimulate growth more than milk. Young animals starting out well do not maintain their advantage over the milk-fed ones, and in time lag far behind them.

In conclusion it may be said that our newer knowledge of nutrition should make us more appreciative of the fact that all dietary essentials—energy, protein, vitamins, mineral constituents—must be considered in relation to one another, none being able to function fully without the others in suitable proportions. We now have methods of demonstrating the contributions which individual foods can make to the diet as a whole, and have shifted our emphasis, giving a new prominence to milk and green vegetables which make good the defects of a cereal-meat-potato diet. And finally, we can demonstrate the far-reaching influence of a good or bad diet, not only upon individuals, but upon the stamina which they may impart to their descendants. Hindhede, the Danish nutrition specialist, says: "The principal cause of death is food and drink," but let us say rather, "The chief cause of life, long and vigorous, may be food and drink, if we follow where science leads."

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SHORT SCALES FOR MEASURING HABITS OF GOOD CITIZENSHIP

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INTRODUCTORY STATEMENT. The Upton-Chassell Scale for Measuring the Importance of Habits of Good Citizenship, described in the TEACHERS COLLEGE RECORD for January, 1919, has attracted such wide attention throughout the country and has proved to be of such value in the Horace Mann School that a brief statement of its genesis and practical use may be valuable.

Prior to 1917 the reports to parents used in the Horace Mann School were of the conventional kind, and included reports upon the school subjects and upon the general qualities of courtesy, promptness and system. Parents were informed of the progress of their children by the use of the symbols 1 (Excellent), 2 (Good), 3 (Fair), 4 (Unsatisfactory). For several years there had been much criticism of these reports by both parents and teachers, particularly those of the middle and the upper grades. The use of specific marks, whether figures or letters, tended to stimulate undesirable rivalry among pupils, made easy the use of monetary rewards by zealous but unwise parents, and led to stressing wrong ideals. The attempt to report upon a pupil's character under a few general headings was found to be particularly unsatisfactory. Such reports were so vague and perfunctory that neither pupils nor parents knew just what information the teacher wished to convey.

The result of these criticisms was a meeting of all the teachers of the school at which the problem was thoroughly discussed. Two committees were appointed, one for the high school and one for the elementary school. The committee for the elementary school, Mrs. Siegried M. Upton, teacher of the fifth grade, and Dr. Clara Chassell, school psychologist, made a careful study of the situation and subsequently recommended a comprehensive plan for reports to parents which was adopted by the school. This analysis of habits and attitudes, together with information as to their relative importance and a method of reporting them to parents, was a part of the general plan.

These new reports were first used during the school year of 1918–1919, and have been in use ever since, with such modification as our experience each year has led us to make.

The present article presents eight short scales, derived from the original chart or scale, which are intended to supplement the use of the chart for

purposes of school reports by furnishing a quantitative measure of a pupil's progress in good citizenship corresponding to those quantitative measurements now available in certain school subjects like spelling, reading, and arithmetic. Experimental work with these short scales in mimeographed form has been in progress since 1919, but the first formal report concerning them is made at this time.

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Three years ago in the TEACHERS COLLEGE RECORD appeared an article by two of the writers presenting a chart of "habits and attitudes desirable for good citizenship," [1] which had been prepared for use in the Horace Mann Elementary School.[2] This chart, which included 187 items, attempted "an analysis of conduct in terms of the concrete and specific habits and attitudes which should characterize a child who is taking his part as a good citizen in an elementary school democracy," and provided definite information with regard to the relative importance of the items listed.

The following selections from the chart will serve to illustrate the nature of the items and the method of arrangement. The number at the left of each item represents the group to which it was assigned by seventy-four judges, 10 representing the most important items, 9 those next in importance, and so on; the numbers in parentheses are more exact values.

IS ORDERLY

5 Is neat in dress. (4.6)
4 Puts away apparatus or materials when through with them. (4.25)
4 Keeps desk, table, and locker in good order. (3.85)
3 Has a good arrangement of materials on desk or table, especially during the industrial or fine arts lessons. (3.4)

IS CHARACTERIZED BY HELPFUL INITIATIVE

9 Finds ways of adapting his own work or play to the good of the group. (8.7)
8 Directs the activities of the group toward useful ends, but does not 'boss'. (8.3)

[1] "A Scale for Measuring the Importance of Habits of Good Citizenship" by Siegried M. Upton and Clara F. Chassell, in *Teachers College Record*, Vol. XX, pp. 36–65 (now available in a separate reprint as *Teachers College Bulletin*, Twelfth Series, No. 9, Jan. 1, 1921, Bureau of Publications, Teachers College).

[2] The chart has been in use in a number of other schools, also, including at least one high school.

8 Seeks intelligently opportunities for serving others. (8.3)
8 Finds ways and means of improving his weak points. (7.8)
7 Engages in free experimentation with a useful purpose in mind. (7.4)
7 Seeks information by asking questions, by observation, and by other methods. (7.0)
7 Formulates projects. (7.0)
7 Is resourceful in finding new tasks when those assigned have been finished. (6.7)
6 Makes or otherwise provides such apparatus and materials as are needed for carrying out his project. (5.7)
6 Is ready with helpful suggestions as to better ways of doing things. (5.6)
5 Volunteers in the recitation. (4.6)

Is Honest and Truthful

10 Tells the truth without flinching or compromise, trying to give a correct impression. (9.7)
9 Faces facts squarely and does not allow himself to be misled by prejudices. (8.9)
9 Does not take the property of others without their consent. (8.9)
9 Does not copy another person's work. (8.7)
8 Endeavors to restore lost property to the rightful owner. (8.1)
6 Does home work entirely himself, or with only such help as is designated by the teacher. (6.4)
5 Makes a straightforward recitation. (5.4)
5 Avoids exaggerations. (4.6)
4 Does not pose. (4.0)

The primary purpose of the chart was to serve as a guide to teachers in the marking of quarterly reports sent to parents. It was also an aid to teachers in the training of their pupils in the particular habits or attitudes in which they were found weak or deficient; in this respect it became an informal course of study in habit formation, each child being helped individually both at home and at school to form the habits which he most needed to acquire, a limited number of these having been noted on the quarterly report card sent to parents.

In the same article in an earlier form of the chart there was also provided an instrument for the quantitative measurement of conduct, and the statement was made that a simplified method of determining a conduct score, based on the more complete chart, was being devised.[3] The eight short scales referred to in this statement and described below were prepared

[3] See *Record* cited, p. 43, footnote (*Bulletin*, p. 10, footnote).

in 1919 soon after the appearance of the chart, and have been available in mimeographed form since that time.

THE EIGHT SHORT SCALES

Throughout the following description of the eight short scales it will be necessary to distinguish carefully between the use of the words *scale* and *chart*. The word *scale* now refers to these short scales, of which Scale A, printed on p. 57, is a specimen; while the word *chart* refers to Chart I, which is illustrated on pp. 53f., and which was fully described in the earlier article.[4]

By reference to Scale A on p. 57, it will be seen that it contains twenty-four different habits or attitudes which have been selected from the chart referred to above. These twenty-four items are divided into three groups, the groups being separated from each other by horizontal lines, the first group containing the five habits of least importance; the second group the eleven habits of next greater importance; and the third group the eight habits of greatest importance. The importance of each habit in Scale A is represented by the number in parentheses at the end of the habit. For example, the third item of Scale A, "Keeps desk, table, and locker in good order," is followed by the number (4), which indicates its importance, this number being the same one which appears in black-face type at the left of this item in the selections from the chart on pp. 53f. The other seven scales, reproduced on pp. 73–79, are constructed according to the same plan as Scale A.[5]

METHOD OF RATING CHILDREN ON THE SCALES

The use of the scales can best be understood by illustrating the method of rating a child on Scale A, with the subsequent calculations to determine the child's score on this particular scale. It should be noted that in actual practice it is desirable that teachers rate their pupils on at least two scales, since in this way the reliability of the results is considerably increased and the number of habits and attitudes specifically analyzed in the case of any one child is doubled.

The directions for marking the scales are given on p. 56. In following them the reader should refer to Scale A on p. 57.

[4] See *Record* or *Bulletin* cited.

[5] In these other scales, however, the numbers indicating the importance of the items, which appear in Scale A at the end of each item, have been omitted.

DIRECTIONS FOR MARKING THE SCALES

The numbers 0, 1, 2, and 3 appearing in the columns at the left of each item on the scale (see Scale A opposite) are to be interpreted as follows:

0 indicates almost complete absence of the habit or attitude in question;

1 indicates below average attainment;

2 indicates above average attainment;

3 indicates practically perfect attainment.

In the case of each item underline the number which represents the child's present degree of attainment in the given habit or attitude. After marking the twenty-four items in this way, proceed further as follows:

(1) Add the underlined numbers opposite the first five items (separated from the remainder of the scale by a black line extending across the page), and enter this sum in the space provided after the multiplier 3 in the margin at the left. Perform the multiplication indicated, and enter the result in the space provided.

In the specimen marking of Scale A, given on p. 57, the sum of the five underlined items in the first part is 8, which is to be multiplied by 3, thus giving 24 as the score on the first part of Scale A.

(2) Add the underlined numbers opposite the eleven items in the second part of the scale, enter this sum in the space after the multiplier 5, perform the multiplication indicated, and enter the result.

In the specimen marking of Scale A, the sum of the eleven underlined items in the second part is 16, which is to be multiplied by 5, thus giving 80 as the score on the second part of Scale A.

(3) Add the underlined numbers opposite the eight items in the third part of the scale, enter this sum in the space after the multiplier 7, perform the multiplication indicated, and enter the result.

In the specimen marking of Scale A the sum of the eight underlined items in the third part is 13, which is to be multiplied by 7, thus giving 91 as the score on the third part of Scale A.

(4) Add the scores on the three parts of the scale, and enter the total score at the top of the page, after the words Score in Points. The maximum score, possible only in case an individual should be considered of sufficiently perfect attainment for a credit of 3 to be assigned to each item, is 378 points.

In the specimen marking of Scale A the addition of 91 + 80 + 24 gives 195 as the total score, or the score in points.

(5) By reference to the table on p. 72, find the value of this score in points expressed as a per cent of 378 (the maximum score possible), and enter this figure after the words Score in Per Cent, in the space provided at the top of the page.

According to the table on p. 72 the total score of 195 on Scale A is equal to 52 per cent of 378, the maximum score possible. Thus 52 is entered as the score in per cent.

Allowing two or three days to elapse, if possible, after marking the pupil on the one scale, proceed similarly with a second scale. To combine the two ratings, add the scores in per cent on the two scales, and divide the sum by 2. Enter this result on the line below the words Average Score in Per Cent, in the space provided at the top of the page.

In the illustration the same child made a score in per cent of 54 on Scale B, thus giving 53 as the average score in per cent on the two scales.

SCALE A

Score in Points *195* Average Score in Per Cent

Score in Per Cent *52* on Scales A and B = *53*

Name *Otto Hurrey* Age *9* yrs. *10* mos. Sex *Boy* Grade *III*

School *West Side* Pupil marked by *C. F. C.* Date *Mar. 5, 1919*

3 × 8 = 24	0	1	**2**	3	Puts on or takes off gymnasium shoes in three minutes or less. (1)
	0	1	**2**	3	Does not run in the halls. (2)
	0	**1**	2	3	Keeps desk, table, and locker in good order. (4)
	0	1	2	**3**	Laughs and talks quietly. (4)
	0	1	2	3	Is unassuming. (5)
5 × 16 = 80	0	1	**2**	3	Makes a straightforward recitation. (5)
	0	1	2	3	Does not interrupt others needlessly. (6)
	0	1	**2**	3	Is quiet and orderly when the teacher is not in the room. (6)
	0	1	2	3	Is economical in the expenditure of money for lunch and other personal necessities, and refrains from extravagances. (6)
	0	1	**2**	3	Carries out directions of school and family physician. (6)
	0	1	**2**	3	Sees the amusing side of a bad situation. (6)
	0	**1**	2	3	Considers carefully the bearings of replies and suggestions made in answer to questions or problems. (6)
	0	**1**	2	3	Is attentive when some one else is talking, whether it be another pupil, a teacher, a visitor, or a speaker in a public place. (7)
	0	1	**2**	3	Is pleasant in a difficult situation, as, for instance, when some one else is cross. (7)
	0	1	2	**3**	Does not let another pupil make wrong use of his work, such as copying from his examination or home-work papers. (7)
	0	**1**	2	3	Expresses a preference when he can support it with valid reasons, especially when some issue is at stake. (7)
7 × 13 = 91	**0**	1	2	3	Engages in free experimentation with a useful purpose in mind. (7)
	0	1	2	**3**	Gives time and money to worthy causes. (8)
	0	**1**	2	3	Thinks, chooses, and acts independently; but realizes when help from other sources is desirable. (8)
	0	1	2	**3**	Has a high standard of workmanship and tries to measure up to it. (8)
	0	1	**2**	3	Approaches difficult tasks resolutely. (8)
	0	1	**2**	3	Respects those in authority, including parents and teachers, and is faithful to them. (9)
	0	**1**	2	3	Gives up his own preferences when they interfere with the good of the group. (9)
	0	**1**	2	3	Appreciates the priceless value of personality, and tries to give opportunities for its highest attainment in others. (10)

USES OF THE SCALES

As current educational practice makes increasing provision for the development of initiative and the power of self-direction, even in our youngest school citizens, the necessity for such training in desirable habits and attitudes as will enable children to make the best use of their freedom becomes more and more apparent. Experience in many school subjects has taught us that measurement of a function or a group of functions is one of the best means of insuring improvement. Hence a convenient instrument for measuring the habits and attitudes of good citizenship in the school community, such as these scales provide, may well meet a genuine need. The practical value to parents, as well as to children, of reporting on a limited number of habits and attitudes has already been demonstrated in the Horace Mann School and elsewhere. A more detailed report, consisting of ratings on two or more of these scales, should serve an even greater usefulness. Moreover, re-ratings after an interval [6] on the same or on different scales constitute a valuable measure of the pupil's progress in forming new habits. Further, by use of the scales valuable information as to a child's ability to carry on successfully the work of the next higher school grade may be secured. In fact, the Horace Mann School considers the development of right habits and attitudes of such importance from this point of view that it is hoping to incorporate ratings from these scales, together with results from the standard pedagogical and psychological tests already used, in the data assembled for determining spring promotions.

The similarity of these scales in purpose, practicability, and use to the tests for school subjects now so widely current, is evident. For purposes of concrete illustration it may be worth while to note certain important respects in which they closely resemble the well-known Ayres Spelling Scale. In the first place, they list a large number of bonds desirable for school children to form. Again, a low score on one of these scales may for the first time call attention to the necessity for training in a considerable number of habits. In addition, specific bonds which need to be formed are indicated. Lastly, unlike scales designed for measurement purposes only, these citizenship scales should

[6] It is recommended that re-ratings be made at intervals of two or three months.

prove of most value in those instances in which they have been used as a course of study, where provision has been made for definite training in the habits and attitudes listed, and where the amount of improvement has subsequently been measured.

Another use of the scales which may have more far-reaching results with the older pupils than any so far suggested, is that of self-measurement. By stimulating thought and discussion as to what requirements in habit formation pupils should make of themselves or what requirements others have a right to make of them, such self-rating should have value even if the pupils do not altogether accept the avowedly adult and incomplete formulation of desirable conduct found in these scales.[7]

Furthermore, although the scales have been prepared with school situations and needs primarily in mind, their usefulness is not restricted to the school alone. In the home as well, parents should find it practicable and helpful to check up the conduct of their own children from time to time by ratings on the scales.

Enthusiasm for measuring the more readily observed types of behavior described in these scales, however, should blind no one to the fact that until motives can be taken into account, the most important aspect of character development remains unmeasured.[8] Neither should the desire to have a child make a high score on such a scale lead one to forget that the child's reason for acquiring a certain habit or attitude and the method used by teacher or parent in inducing the child to acquire it are fundamentally of greater importance than the acquirement of the habit or attitude itself.

THE CONSTRUCTION OF THE SCALES

In the construction of these scales the numerical values already assigned the items in the main chart, illustrated on p. 53f., were used. The method of obtaining these values had been as follows. The judges were instructed to "determine the relative value of

[7] For the suggestion that classes make their own "citizenship charts," and the value of such charts, see *Record* cited, pp. 41–42, or *Bulletin*, pp. 8–9.

[8] Cf. the discussion in *Record* cited, pp. 51–52 (*Bulletin*, pp. 18–19). As therein explained, in the evaluation of items no provision was made for determining the value of an act from the standpoint of the motive which induced it. This was, however, suggested as an important problem for future study; and the possibility of eventually evaluating acts according to the motives which prompted them, not only analyzed in terms of foreseen social consequences, but also evaluated from this standpoint, was noted.

these habits and attitudes, judging the item in question *from the standpoint of its importance as an essential element in democratic citizenship in the case of elementary school children*," and distribute the items into ten groups, putting in group 10 the most important from this point of view, in group 9 the next most important, and so on. Seventy-four persons in all assisted in the evaluation of the items. These included teachers and supervisors in the fields of kindergarten, elementary, secondary, and religious education; specialists in other fields; and parents. The value finally used was the exact median of the judgments.[9]

In the selection of items for the various scales the most important general rule followed was that each scale should include items from as many different headings in the chart, and as many different items from each heading, as possible.[10] The assignment of any particular item to a given scale at the outset, however, was largely random. The items as first assigned were rearranged somewhat in order to make the scales statistically equivalent to each other; that is, in order to make the total value of one scale equal to the total value of each of the others. It proved possible to do this so that the total value of each scale was approximately 153, this total value [11] being obtained by using the exact values of

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[9] The writers wish to acknowledge their indebtedness to Professors E. L. Thorndike and C. B. Upton, of Teachers College, for helpful suggestions in the construction of the scales; to Mr. Louis Marks, principal of the New York City public school included in this study, and Dr. Francis N. Maxfield, supervisor of special education of the Newark, New Jersey, public schools, for securing ratings of their pupils on the scales from teachers in these schools; to Miss Elizabeth Irwin, psychologist, and Miss Meta L. Anderson, director of Binet schools and classes, of the New York City public schools and the Newark public schools, respectively, for supplying needed information; and to the teachers in the private and the public schools reported, for their coöperation in making the ratings.

[10] This meant that of the 23 items listed in the chart under the heading, "Is Courteous and Considerate," for example, seven out of the eight scales were assigned three items each, and the remaining scale, two items. Similarly, the five items appearing under the heading, "Is Obedient," were distributed to five different scales, the remaining three scales being supplied with items from some other short list, or from a heading under which more than eight items had appeared, the trait selected being as closely related as possible. Since the original chart contained only 187 items, in order to make a total of 24 items for each of the eight scales, the five least important items were used a second time. These have been replaced in the scales as printed by five new items estimated to be practically equivalent in value.

[11] After the final adjustments had been made, the total values of the eight scales were as follows:

Scale	A	B	C	D	E	F	G	H
Value	152.25	152.35	152.55	152.60	152.95	153.10	153.25	153.30

each item (given in parentheses at the end of each item in the illustration from the chart on pp. 53f.), rather than the nearest integral values given at the left of each item on p. 57. In this rearrangement, however, great care was taken not to disturb the equivalence in headings represented and in number of items under each heading already provided for.

The items selected for each scale were finally arranged upon the page in the order of their relative importance, the least important first, and divided into three groups, the first group containing five items, the second eleven, and the third eight. In order to provide an easy method of weighting the score for each part of the scale according to the importance of the items, the exact medians for the 24 items were replaced by multipliers for each group of items.[12] A device for easy scoring was also included.[13] A table for changing the total score made on one of the scales into a per cent of the maximum score possible, has also been provided (see p. 72).

RESULTS OF USING THE SCALES

The ratings on these scales of one thousand children are included in this study. With two exceptions, all of the fifty-three teachers who coöperated in making these ratings marked their pupils on two scales. In one class, however, a single scale was used, and in another, all of the eight scales. In addition, the pupils in these two classes marked themselves on one scale, the items having been talked over and explained in the class before the ratings were made.

Of the one thousand children rated, 233 were pupils in private schools, one or more classes being rated in each of the following

[12] The determination of these multipliers was as follows. The exact medians for all the items in the eight scales were listed in order separately for each of the three groups of items, and the median for each group found. Three numbers which would maintain approximately the same numerical relation between the three parts of the scale as was found to exist between these medians, were then chosen as the multipliers to be used.

[13] A slightly modified form of the scales was made available for the use of teachers in the Ellensburg, Washington, State Normal School in the summer of 1919 by the Misses Louise E. Poull and Mary A. Grupe, the numbers 0, 1, 2, and 3 being replaced by six parallel columns in which three separate ratings could be entered, one column being used for date of rating and one for the rating itself. The same scoring device was used, the instructions being, "In the case of each item place the number which represents the child's present degree of attainment in the given habit or attitude." It was thus possible to use the same scale for three successive determinations of conduct score.

schools: the Horace Mann, the Ethical Culture, the Riverdale Country, the Scarborough, and the Social Motive; 366 were pupils in the regular grades and "opportunity" classes, and 100 in the ungraded classes, of a New York City public school; and 301 were pupils in the Binet [14] schools and classes of the public schools of Newark, New Jersey.

The private schools named, represented in the table by key letters, are all tuition schools situated in favorable environments in or near New York City. They are coeducational with one exception.[15] The median or average intelligence quotient (I.Q.) for each one of these schools falls in the range from 110 to 120, inclusive.

The New York City public school reported, referred to in the table as Public A, is situated in the lower east side of Manhattan. Practically all of the pupils are either Jewish or Italian, the Jewish children constituting the vast majority. With very few exceptions all the classes in the school are for boys only. Of those rated, only the Terman [16] "opportunity" classes include girls as well. Children are classified throughout the grades, in general, according to intelligence quotient, Aa classes being higher in intelligence than Ab classes, Ba than Bb, and so on. A classes are covering the first half of the work of the grade, B classes, the second. The median I.Q. for the entire school is approximately 90; that for the Terman classes, however, is higher than the median for the private schools included in the study. The one low "opportunity" class rated includes a large proportion of borderline and dull children. Assignment to the ungraded classes, with the exception of the class for neurotic children (in this instance Ungraded V), is made on the basis of ability to do grade work rather than strictly on the basis of mental age; chronological age, social adjustment, and mental ability being taken into account. The intelligence quotients of the children available at the time the ratings were made with very few exceptions fall below 75.[17]

[14] The name used to designate special schools and classes for feebleminded children.

[15] In one of the coeducational schools, however, all the pupils in one of the classes rated were boys, and all in another, girls.

[16] The name used to designate classes for bright children.

[17] Ungraded V and VI had not been tested; the former would, however, include some children of normal intelligence.

The Binet schools and classes of the Newark public schools, grouped together in the table under the heading Public B, located in various parts of the city, are for feebleminded children only. Pupils are graded in these classes mainly on the basis of mental age, although amount of previous training is also taken into consideration. The mental ages given as corresponding in general to the various types of classes are as follows:

Grade of Feeblemindedness	*Mental Age*	*Grade of Feeblemindedness*	*Mental Age*
Very low	3–4 yrs.	Middle	6 yrs.
Low	4–5 "	Middle–high	6–7 "
Low–middle	5–6 "	High	8–9 "

Classes are for boys and girls separately, or for both, as indicated in the table.

The papers obtained from these various schools were carefully examined, items not rated by the teachers were assigned values by a common-sense procedure,[18] and errors in the calculation of the scores were corrected. The returns were then tabulated, and the median total score for each class on the separate scales and on the average of the scales was found. These median total scores, together with the range, the number of cases, and the scales used, are given in full in the accompanying table. In addition, the corresponding median scores in per cent, found by the use of the table already mentioned,[19] are included.

An examination of Part I of the table, giving results for regular grades and opportunity classes, shows considerable variation between medians not only within a given grade when results from a number of schools are compared, but also from grade to grade in any particular school. This variation does not correspond to any known single causative factor, not even, apparently, to grade in school, and probably, by inference, not to chronological age. It is doubtless due in part, and perhaps in large measure, to differences in standards among teachers using the scales as to what constitutes average attainment in the various habits and attitudes rated. Hence it is probably undesirable to attempt to

[18] The general rule followed was to assign the omitted items on a scale that value—whether the most frequent rating or the average of the two most frequent ratings or some other figure—which seemed best to represent the ratings of the pupil made by the teacher on the scale in question. Instances in which one third or more of the items were omitted are noted in the table on pp. 64–65.

[19] See p. 72.

SUMMARY OF RESULTS—AVERAGE OF SCORES ON PAIRED SCALES

PART I. REGULAR GRADES AND OPPORTUNITY CLASSES

School	*Grade*	*Sex*[20]	*Scales*	*No. of Cases*	*Range of Total Scores*	*Median Total Score*	*Median Score in Per Cent*
Public A	IBa	B	E and F	5	256–300	263[21]	70
Public A	IBa	B	G and H	25	155–375	318[21]	84
Private A	I	B, G	A and B	23	130–348	201	53
Private C	I	B, G	G and H	7	128–267	174	46
Public A	IIAb	B	A and B	37	47–368	306	81
Public A	IIAa	B	A and B	12	211–345	284	75
Public A	IIAa	B	C and D	31	218–375	264	70
Public A	Op. IIA–IIB (low)	B	C and D	28	19–255	128	34
Public A	IIBc	B	C and D	29	76–300	182	48
Public A	IIBb	B	C and D	44	10–214	80	21
Private A	II	B, G	A and B	25	118–305	213	56
Private B	II	B	C and D	5	209–291	226	60
Private C	II	B, G	G and H	8	81–206	150	40
Public A	Op. IIB–IIIB (Terman)	B, G	G and H	21	282–371	339	90
Public A	IIIAb	B	A and B	41	5–378	164[21]	43
Public A	IIIAa	B	G and H	46	191–362	277[21]	73
Private A	III	B, G	F and H	24	121–245	163	43
Private B	III	B, G	C and D	9	180–271	243	64
Private D	III	B	G and H	14	166–318	270	71
Private E[22]	III	B, G	E	16	239–318	297	79
Private A	IV	B, G	A and C	26	89–357	247	65
Private B	IV	B, G	C and D	8	116–329	307	81
Private A	V	B, G	A and B	30	117–347	229	61
Private A	V	B, G	C and D	30	136–356	240	63
Private A	V	B, G	E and F	30	125–350	223	59
Private A	V	B, G	G and H	30	102–345	221	58
Public A	Op. VB–VIA (Terman)	B, G	E and F	23	214–363	273	72
Private B	V–VI	G	C and D	8	119–362	282	75
Private A	VI	B, G	E and H	30	162–363	262	69
Public A	Op. VIIA (Terman)	B, G	E and F	24	270–378	359	95

[20] B, Boys; G, Girls.

[21] In this instance the number of items for which ratings had to be supplied amounted to one-third or more.

[22] Results from this class are included also, although ratings were made on one scale only.

SUMMARY OF RESULTS—AVERAGE OF SCORES ON PAIRED SCALES

PART II. UNGRADED AND BINET CLASSES

PUBLIC SCHOOL A

Class	*Sex*[23]	*Scales*	*No. of Cases*	*Range of Total Scores*	*Median Total Score*	*Median Score in Per Cent*
Ungraded I	B	E and F	17	72–198	123	33
Ungraded II	B	E and F	17	4–259	76	20
Ungraded III	B	E and F	16	15–151	54	14
Ungraded IV	B	G and H	19	22–202	133	35
Ungraded VI	B	G and H	15	72–175	140	37
Ungraded V (neurotic)	B	E and F	16	85–331	185	49

PUBLIC SCHOOL B

Type of Class	*Sex*[23]	*Scales*	*No. of Cases*	*Range of Total Scores*	*Median Total Score*	*Median Score in Per Cent*
Very low-grade	B, G	E and F	15	0–17	4	1
Low-grade	G	G and H	11	9–51	27	7
	B, G	E and F	15	12–116	28	7
Low-middle-grade	B	G and H	14	2–59	31	8
	B	G and H	16	13–56	33	9
	B	C and D	14	45–309	177[24]	47
	B, G	C and D	13	27–148	85	22
Middle-grade	G	G and H	14	61–149	124	33
	B	E and F	16	83–126	102	27
	B	A and B	15	48–144	89	24
	G	A and B	11	50–121	106	28
	G	E and F	9	211–362	270	71
	G	C and D	14	68–256	95	25
	B	C and D	12	18–107	39	10
	B, G	C and D	8	21–93	66	17
Middle-high-grade	B	G and H	15	4–129	31	8
	B	G and H	15	6–153	35	9
	G	E and F	14	28–173	116	31
	B	C and D	15	208–279	247	65
High-grade	B	A and B	11	42–198	118	31
	B	E and F	12	115–198	154	41
	B	E and F	12	62–161	102	27
	B	C and D	10	41–335	157	42

[23] B, Boys; G, Girls.

[24] In this instance the number of items for which ratings had to be supplied amounted to one-third or more.

establish norms either for grade in school or for chronological age until the number of returns is so greatly increased as to include ratings of a sufficiently large number of classes by each teacher to eliminate the error resulting from consideration of a particular class, and ratings from a sufficiently large number of teachers for each grade or age to eliminate the error resulting from the judgment of a particular teacher or a limited number of teachers. Even then it may be found that the variation in the ratings of different teachers is so great that no particular guidance can come from such norms.

The results for ungraded and Binet classes, given in Part II of the table, show, on the other hand, some correlation between mental age and score on the scales. Here, too, however, frequent interruptions in the progression of medians from the lower to the higher grades of feeblemindedness and the variation in mental age within any given class make the calculation of norms for given mental ages on the basis of present evidence inadvisable. These results nevertheless suggest that eventually mental age norms[25] of genuine significance, at least for the lower ages, could be established.

A further point of interest is the fact that in both sections of the table a comparison of results from classes including both boys and girls with results from classes for boys only fails to give any clear indication of sex differences.

From the preceding discussion it is apparent that at least until well-defined standards are available the most important basis of comparison for the pupils in a given class is the median or the average of their own group. The teacher herself, however, will doubtless find it worth while to check up ratings of her pupils with results given in the table from classes and schools most comparable with her own.

COMPARATIVE STUDY OF THE EIGHT SCALES

Two lines of evidence support the conclusion that the scales are substantially equivalent in actual use as well as in mechanical construction. The first of these is found in a number of correlations obtained between ratings of pupils made by teachers on two or more scales; the second, in the results of a comparison of

[25] Since, as already indicated (see p. 63), assignment to the various types of classes is made largely on the basis of mental age.

the medians of the ratings assigned on the various scales by all the teachers using two or more scales.

The coefficients of correlation, r, computed between the ratings made by teachers on two or more scales, are given in the following table:

Scales	r	*Grade or Class*	*No. of Pupils*
A and B	.86	Grade V, Private School A	30
	.92	Grade II Ab, Public School A	37
	.97	Grade III Ab, Public School A	41
C and D	.86	Grade V, Private School A	30
	.93	Grade II Bc, Public School A	29
E and F	.90	Grade V, Private School A	30
	.82	Ungraded I, Public School A	17
	.92	Ungraded V, Public School A	16
G and H	.96	Grade V, Private School A	30
	.81	Ungraded VI, Public School A	15
Average	.895		

As is evident from the table, all the correlations obtained show a close relationship between ratings made on the various scales. None of the correlations fall below .80, and six of the ten correlations between the paired scales are .90 or above, the average correlation being .895. The reliability of the scales thus compares very favorably with that found for other types of equivalent tests. It is of interest to note that correlations of .95 and .94, not given in the table, found between the average of the first four scales and the average of the second four, and between the average of the first two scales and the average of the eight scales, respectively, in the case of the fifth grade of Private School A, are no higher than those found in two instances between the paired scales.[26] So far as the practical use of the scales is concerned these results indicate, then, that teachers marking their pupils on two scales may expect their ratings to be in general agreement. Moreover, they will probably secure almost as reliable a measure of their pupils from the use of the two scales as from the use of a larger number.

[26] The comparison with results for paired scales will seem even more favorable if it be borne in mind that the correlation between the first two scales and the average of the eight scales is unduly high, owing to the fact that the data for the eight scales include the data for the two with which they are being compared.

Similarly, a study of the medians of the ratings on the various scales shows relatively close agreement in most instances. In a summary of the data obtained from ratings made on paired scales by from two to sixteen teachers, the average differences between the median total scores on the scales being taken as the basis of judgment, it may be said that teachers tend to mark the same children 10 points, or 3 per cent, lower on Scale A than on Scale B; 9 points, or 2 per cent, higher on Scale A than on Scale C; 4 points, or 1 per cent, higher on Scale C than on Scale D; 17 points, or 4 per cent, lower on Scale E than on Scale F; 10 points, or 3 per cent, higher on Scale E than on Scale H; 17.5 points, or 5 per cent, higher on Scale F than on Scale H; and 6 points, or 2 per cent, lower on Scale G than on Scale H. As might be anticipated, the variation between medians for individual teachers is in some instances very great. With the exception of Scales F and H, however, on which pair ratings were made by only two teachers, no scale in a pair was rated uniformly high or low, the number of plus and the number of minus differences balancing each other fairly well.[27]

The average differences found between the median total scores of the eight scales marked by one teacher are similar in amount, with one exception, to those found for paired scales. A summary of the results for all eight scales shows that a tendency is apparent to mark the same pupils 10 points, or 3 per cent, higher on Scale A than on the other seven scales; 10 points, or 3 per cent, lower on Scale B; 14 points, or 4 per cent, lower on Scale C; 40 points, or 11 per cent, higher on Scale D; 14 points, or 4 per cent, lower on Scale E; 4 points, or 1 per cent, higher on Scale F; 7 points,

[27] The selection of the particular scales to be used by the various teachers was determined almost entirely by chance factors. The averages of the median total scores for paired scales, the number of teachers marking, and the range of the differences between median total scores are as follows:

Scales	Averages of Median Total Scores	Number of Teachers Using	Range of Differences between Medians
A and B	182.1 and 192.5	9	−34 to +18
A and C	235.8 and 226.8	2	− 3 to +21
C and D	176.5 and 172.1	16	−48 to +66
E and F	148.1 and 165.1	15	−83 to +62
E and H	241.3 and 231.3	2	− 4 to +24
F and H	201.8 and 184.3	2	+12 to +23
G and H	152.2 and 157.7	15	−51 to +25

or 2 per cent, lower on Scale G; and 10 points, or 3 per cent, lower on Scale H.[28]

It is apparent that none of the divergences in ratings on the various scales are serious with the single exception of that between Scale D and the other seven scales. The fact that results for paired scales, representing sixteen teachers, show a slight tendency to mark pupils higher on Scale C than on Scale D, however, suggests that a comparison of Scale D with the other seven scales, based upon ratings by a large number of teachers, might show similarly satisfactory results.

Further evidence as to the agreement between ratings on the scales is found in a comparison of the median average scores on the four pairs of scales marked by one teacher. This shows an average difference of 10.5 points, or 3 per cent, and a maximum difference of 19 points, or 5 per cent.[29]

Thus the conclusion is justified that the selection of the particular scales for use in a given instance is a matter of indifference and may be left to the individual teacher.

AGREEMENT BETWEEN TEACHER AND PUPIL RATINGS

Data for determining the agreement between teacher and pupil ratings are available in the case of the fifth and the third grades, respectively, of Private Schools A and E. In both instances the correlation between teacher and pupil ratings is .50. This degree of agreement would seem to afford convincing evidence that, subjective to a certain degree as are judgments made by persons, whether teachers or pupils, the ratings made on these scales have involved genuine discrimination on the basis of facts actually

[28] In four out of the fifty-six instances in which comparisons were made the medians were identical. The median total score for each of the eight scales and the average of the median total scores of the other seven scales is given below:

Scale	Median Total Score	Average of Medians of Other Seven Scales	Scale	Median Total Score	Average of Medians of Other Seven Scales
A	233.5	223.4	E	212.5	226.4
B	216	225.9	F	228	224.1
C	212.5	226.4	G	218.5	225.5
D	260	219.6	H	216	225.9

It is of interest to note that except in the case of Scale D the total number of points included within the range of the extremes of difference between the median of a given scale and the medians of the other seven scales is identical, namely, 47.5 points; for Scale D it is 21 points.

[29] See the results given in the table on p. 64 for Private School A, Grade V.

observed. In other respects, the findings for the two cases are decidedly variant. In the fifth grade of Private School A, on the one hand, a tendency on the part of the pupils to give themselves a considerably higher rating than that given by the teacher is apparent. The median of the twenty-five pupils' ratings is 293, and of the teacher's, 233, the difference being 60 points, or 16 per cent. The average higher rating by the pupils is somewhat less, i.e., 51 points, or 13 per cent. The scores assigned by the teacher extend over a range of 252 points (from 118 to 370); and by the pupils, over a range of 199 points (156 to 355).

In the third grade of Private School E, on the other hand, a tendency on the part of the pupils to mark themselves slightly lower than the teacher is noted. The median of the sixteen pupils' ratings is 281.5, and of the teacher's, 297. The teacher thus marks the pupils 15.5 points, or 4 per cent higher, when the medians are taken as the basis of comparison. The difference between the averages of the ratings is slightly less, however, the pupils marking themselves on the average 8 points, or 2 per cent, lower. Again in contrast, the scores assigned by the teacher extend over a range of only 79 points (from 239 to 318); and by the pupils, over a range of 123 points (from 212 to 335).

It is thus apparent that until more data are available, final conclusions as to the agreement between teacher and pupil ratings will have to be postponed.

SUMMARY

In the foregoing discussion, eight short scales for measuring the habits and attitudes of good citizenship are described and their derivation and construction explained. In addition, the various uses of the scales are suggested, the method of rating a child is illustrated, and the results of a large number of ratings are given. A comparative study of the scales to determine their equivalence is reported, and the available evidence as to the degree of agreement between teacher and pupil ratings is presented. In conclusion, the points of strength and weakness which have been found to characterize the scales may be summarized briefly as follows:

Among their disadvantages are the more or less subjective nature of the judgments, the absence of a uniform standard as to what constitutes average attainment in a given habit or attitude,

the inability of the average teacher to know the status for every pupil of the many habits and attitudes listed, and the difficulty of establishing norms of genuine significance.

On the other hand, a large number of valuable features may be noted:

1. The scales are found to serve a variety of uses, since they
   a. Provide a convenient instrument for measuring the habits and attitudes of good citizenship in the school, and to a certain extent in the home as well.
   b. Indicate the relative importance of these habits and attitudes as determined by more than seventy competent judges.
   c. Point out specific habits which need to be formed by a given child.
   d. Make possible an accurate measure of progress through provision for re-ratings after an interval.
   e. Afford valuable information as to fitness for promotion.
   f. Serve as a course of study in good citizenship.
   g. Provide a means of self-measurement.
2. The method of rating is simple and straightforward; and provision is made for changing scores in points into per cents of the maximum score possible.
3. Each scale includes a representative sampling of desirable responses.
4. The scales have already been used in making ratings of one thousand children in a number of schools of various types, and these results are available for purposes of comparison.
5. The possibility of eventually securing mental age norms, at least for the lower ages, is apparent.
6. The scales are substantially equivalent both in mechanical construction and in actual use.
7. Ratings made by teachers on two separate scales are found to be in close agreement.
8. Ratings on two scales are found to give practically as reliable results as ratings on a larger number.

The conclusion thus seems to be justified that the short scales for measuring the habits and attitudes desirable for good citizenship presented in this article, give promise of great practical usefulness even in the hands of persons untrained in the technique of measurement.

TABLE FOR CHANGING SCORES IN POINTS INTO PER CENTS OF 378

Score in Points	*Score in Per Cent*	*Score in Points*	*Score in Per Cent*	*Score in Points*	*Score in Per Cent*	*Score in Points*	*Score in Per Cent*
0–1	0	97–100	26	191–194	51	286–289	76
2–5	1	101–103	27	195–198	52	290–292	77
6–9	2	104–107	28	199–202	53	293–296	78
10–13	3	108–111	29	203–206	54	297–300	79
14–17	4	112–115	30	207–209	55	301–304	80
18–20	5	116–119	31	210–213	56	305–308	81
21–24	6	120–122	32	214–217	57	309–311	82
25–28	7	123–126	33	218–221	58	312–315	83
29–32	8	127–130	34	222–224	59	316–319	84
33–35	9	131–134	35	225–228	60	320–323	85
36–39	10	135–137	36	229–232	61	324–326	86
40–43	11	138–141	37	233–236	62	327–330	87
44–47	12	142–145	38	237–240	63	331–334	88
48–51	13	146–149	39	241–243	64	335–338	89
52–54	14	150–153	40	244–247	65	339–342	90
55–58	15	154–156	41	248–251	66	343–345	91
59–62	16	157–160	42	252–255	67	346–349	92
63–66	17	161–164	43	256–258	68	350–353	93
67–69	18	165–168	44	259–262	69	354–357	94
70–73	19	169–171	45	263–266	70	358–360	95
74–77	20	172–175	46	267–270	71	361–364	96
78–81	21	176–179	47	271–274	72	365–368	97
82–85	22	180–183	48	275–277	73	369–372	98
86–88	23	184–187	49	278–281	74	373–376	99
89–92	24	188–190	50	282–285	75	377–378	100
93–96	25						

SCALE B

Score in Points..... Average Score in Per Cent

Score in Per Cent..... on Scales B and... ....

Name..... Age....yrs.....mos. Sex... Grade.....

School..... Pupil marked by..... Date.....

3 X ..... = ...	0 1 2 3	Holds book in correct position.
	0 1 2 3	Picks up something dropped by another.
	0 1 2 3	Responds instantly to signals.
	0 1 2 3	Takes a sufficient amount of time to eat properly.
	0 1 2 3	Orders well-balanced luncheons suited to his needs.
5 X ..... = ...	0 1 2 3	Observes all fire-drill regulations.
	0 1 2 3	Performs errands satisfactorily.
	0 1 2 3	Saves time by having a consciousness of the daily schedule, preparing for the work of the next period when that of the preceding one has been completed.
	0 1 2 3	Avoids whispering when it will annoy others.
	0 1 2 3	Performs such duties as are within his power, including self-help, as tying, buttoning, finding his way, telling time, and supplying simple needs.
	0 1 2 3	Is painstaking in directing strangers and others.
	0 1 2 3	Does not sulk or answer back when reproved.
	0 1 2 3	Treats the members of a visiting team with hospitality.
	0 1 2 3	Assumes willingly school and class duties and obligations, such as holding class offices and serving on committees.
	0 1 2 3	Formulates projects.
	0 1 2 3	Shares good times with others whenever possible.
7 X ..... = ...	0 1 2 3	Regards elderly people with deference.
	0 1 2 3	Participates with a keen interest in group activities and school enterprises.
	0 1 2 3	Directs the activities of the group toward useful ends, but does not "boss."
	0 1 2 3	Protests against any one's taking advantage of the weak, stammerers, cripples, or other unfortunate persons.
	0 1 2 3	Does not copy another person's work.
	0 1 2 3	Weighs values, perceives their varying worth, and chooses those of greatest significance.
	0 1 2 3	Confesses wrongdoing and mistakes, and makes such reparations as are within his power.
	0 1 2 3	Subordinates his own will to the larger purposes and ideals of life.

SCALE C

Score in Points..... Average Score in Per Cent

Score in Per Cent..... on Scales C and.....

Name..... Age....yrs....mos..... Sex... Grade....

School..... Pupil marked by..... Date.....

3 × .... = ...	0 1 2 3	Puts on or removes wraps quickly.
	0 1 2 3	Turns to the right in passing people.
	0 1 2 3	Keeps regulations relating to the recess period.
	0 1 2 3	Accepts no "dares" of a foolhardy nature.
	0 1 2 3	Does not cry or complain over trivial things.
5 × .... = ...	0 1 2 3	Allows pupils in front of him or older persons to pass through doorways or into the elevator first.
	0 1 2 3	Reports symptoms of illness promptly.
	0 1 2 3	Enjoys a joke, even at his own expense.
	0 1 2 3	Reads assigned work whether he is to be questioned on it or not.
	0 1 2 3	Does not expect special favors or privileges.
	0 1 2 3	Does not intrude on another person's privacy or time.
	0 1 2 3	Takes pride in the appearance of school property, doing his part to keep the cloak-room in order; picking up paper from floor and stairs; and taking pains not to throw orange-peel or other refuse on street or playground, or to deface desks, books, pictures, walls, woodwork, etc.
	0 1 2 3	Honors those who have rendered distinguished service.
	0 1 2 3	Seeks information by asking questions, by observation, and by other methods.
	0 1 2 3	Is agreeable when he can not have his own way.
	0 1 2 3	Finds possible solutions for problems.
7 × .... = ...	0 1 2 3	Is reverent in attitude during prayer, or at least does not disturb the devotions of others.
	0 1 2 3	Assists heartily in measures to prevent the spread of disease and sickness, such as taking care in case of colds.
	0 1 2 3	Endeavors to restore lost property to the rightful owner.
	0 1 2 3	Concentrates upon the task at hand.
	0 1 2 3	Forms worthwhile purposes and strives to carry them out.
	0 1 2 3	Shows a spirit of helpfulness and service to others, whether in work or in play.
	0 1 2 3	Works for his team rather than for himself.
	0 1 2 3	Is democratic.

SCALE D

Score in Points..... Average Score in Per Cent
Score in Per cent..... on Scales D and... ....
Name..... Age....yrs.....mos..... Sex... Grade....
School..... Pupil marked by..... Date.....

3 X....=	0 1 2 3	Puts on or takes off overshoes quickly.
	0 1 2 3	Puts work away quickly.
	0 1 2 3	Avoids passing in front of others.
	0 1 2 3	Keeps hands and materials away from mouth, and fingers away from nose and ears.
	0 1 2 3	Is careful of his eyes, not reading in a dim light or when lying down; taking care that the sun does not shine on the page, and that the light comes over the left shoulder when he is working or reading; and keeping the book or the paper at a proper distance (about fourteen inches) from the eyes.
5 X....=	0 1 2 3	Conforms to the rules governing the study period.
	0 1 2 3	Is systematic in saving money.
	0 1 2 3	Is ready with helpful suggestions as to better ways of doing things.
	0 1 2 3	Is pleasant in greeting, and (if a boy) raises his hat or cap.
	0 1 2 3	Is free from coarseness or crudities in speech and manner.
	0 1 2 3	Is resourceful in finding new tasks when those assigned have been finished.
	0 1 2 3	Submits gracefully to an unavoidable injury or loss.
	0 1 2 3	Claims no more than his fair share of time and attention, particularly in the recitation period.
	0 1 2 3	Expresses himself coherently and clearly.
	0 1 2 3	Is a good loser.
	0 1 2 3	Helps to carry out worthwhile suggestions made by others.
7 X....=	0 1 2 3	Is not cowardly when unjustly attacked.
	0 1 2 3	Is tactful, avoiding saying or doing that which would unnecessarily pain or annoy another.
	0 1 2 3	Appreciates mastery in intellectual lines, and strives for thoroughness and accuracy in his own work.
	0 1 2 3	Guards confidences, provided his principles are not violated by so doing.
	0 1 2 3	Is sympathetic with the opinions of others, including those who differ with him.
	0 1 2 3	Makes the most of his opportunities.
	0 1 2 3	Is true to family and friends.
	0 1 2 3	Tells the truth without flinching or compromise, trying to give a correct impression.

SCALE E

Score in Points..... Average Score in Per Cent

Score in Per Cent..... on Scales E and.....

Name..... Age....yrs.....mos..... Sex... Grade....

School..... Pupil marked by..... Date.....

3 X.... = ...	0 1 2 3	Leaves room without attracting attention.
	0 1 2 3	Has a good arrangement of materials on desk or table, especially during the industrial or fine arts lessons.
	0 1 2 3	Holds head easily erect and chest high, even when working at a desk.
	0 1 2 3	Is mannerly at lunch.
	0 1 2 3	Washes hands before eating.
5 X.... = ...	0 1 2 3	Endures pain without flinching.
	0 1 2 3	Avoids exaggerations.
	0 1 2 3	Spends in sleep, in a well-ventilated room, the number of hours prescribed for one of his age.
	0 1 2 3	Gives up his seat in crowded places to older persons.
	0 1 2 3	Does not quarrel.
	0 1 2 3	Comes to school on time.
	0 1 2 3	Accepts victory unostentatiously.
	0 1 2 3	Uses leisure time to good advantage.
	0 1 2 3	Keeps his temper.
	0 1 2 3	Senses difficulties in lesson or project, and locates and defines them accurately.
	0 1 2 3	Appreciates the motive prompting expressions of kindness and love, as well as the act itself; and tries to make known his appreciation to the persons concerned.
7 X.... = ...	0 1 2 3	Does not make disparaging remarks or sneer and laugh at others.
	0 1 2 3	Takes pleasure in the success of others.
	0 1 2 3	Assumes responsibility to report wrongdoing through authorized channels, if a friendly protest to the offender has not resulted in effort to rectify the wrong; but distinguishes carefully between tattling, and voicing an honest protest against dishonesty, unfairness, cruelty, and the like.
	0 1 2 3	Keeps appointments and other agreements.
	0 1 2 3	Finds ways of adapting his own work or play to the good of the group.
	0 1 2 3	Stands for fairness in games or arguments.
	0 1 2 3	Respects all forms of religion and belief.
	0 1 2 3	Is unswerving in devotion and faithful in service to his country, but does not render blind allegiance.

SCALE F

Score in Points..... Average Score in Per Cent

Score in Per Cent..... on Scales F and... ....

Name..... Age....yrs.....mos..... Sex... Grade...

School..... Pupil marked by..... Date.....

3 X ..... = ...	0 1 2 3	Puts wraps and overshoes away promptly.
	0 1 2 3	Closes door or desk quietly, and uses pencils and other articles without making unnecessary noise.
	0 1 2 3	Takes his place in line quickly and quietly, and does his part to keep the line in good formation.
	0 1 2 3	Keeps books and apparatus in good condition.
	0 1 2 3	Waits quietly in turn for some privilege, such as sharpening a pencil.
5 X ..... = ...	0 1 2 3	Is neat in dress.
	0 1 2 3	Does not waste paper, pencils, paints, and other materials.
	0 1 2 3	Explains lesson in his own words.
	0 1 2 3	Is not self-conscious in well-doing.
	0 1 2 3	Assumes responsibility for making up work after an absence.
	0 1 2 3	Responds to directions or requests from those in authority, without engaging in unnecessary discussion.
	0 1 2 3	Does home work entirely himself, or with only such help as is designated by the teacher.
	0 1 2 3	Does not procrastinate.
	0 1 2 3	Is cleanly in habits, person, and dress.
	0 1 2 3	Is chivalrous to women and girls (if a girl, acknowledges acts of chivalry pleasantly).
	0 1 2 3	Is courteous to opponents.
7 X ..... = ...	0 1 2 3	Is cheerful.
	0 1 2 3	Finds ways and means of improving his weak points.
	0 1 2 3	Observes such expressions of loyalty as removing his hat when the flag is presented or when the national anthem is sung.
	0 1 2 3	Defends absent persons who are unjustly attacked.
	0 1 2 3	Conforms to the will of the majority, as in the case of following a chosen leader, provided no principles are violated by so doing.
	0 1 2 3	Values fine traits of character, and chooses good associates.
	0 1 2 3	Perseveres in spite of failure.
	0 1 2 3	Recognizes moral purpose in the universe, and reverences a Higher Power.

SCALE G

Score in Points..... Average Score in Per Cent

Score in Per Cent..... on Scales G and... ....

Name..... Age....yrs....mos..... Sex... Grade...

School..... Pupil marked by..... Date.....

3 X ....=	0 1 2 3	Keeps pencils sharpened, ready for use.
	0 1 2 3	Passes and collects materials promptly.
	0 1 2 3	Opens door for others.
	0 1 2 3	Speaks without shyness and in a direct manner.
	0 1 2 3	Does not indulge in sweets to a harmful extent.
5 X ....=	0 1 2 3	Puts away apparatus or materials when through with them.
	0 1 2 3	Acknowledges favors graciously.
	0 1 2 3	Anticipates his needs and does not borrow.
	0 1 2 3	Is pleasing in personality.
	0 1 2 3	Attains the best of "form."
	0 1 2 3	Enjoys the beautiful in art and nature.
	0 1 2 3	Is thoughtful in making requests of others, including helpers.
	0 1 2 3	Gives praise where praise is merited.
	0 1 2 3	Plans his daily program so that there may be a healthful balance between work and outdoor activities.
	0 1 2 3	Takes care not to promise more than he can fulfill.
	0 1 2 3	Gives proper criticism in a courteous manner, and accepts suggestions from others and profits by them.
7 X ....=	0 1 2 3	Sees details in their relation to the whole and selects essential points.
	0 1 2 3	Tries to do his best even when the task is disagreeable or praise is not forthcoming.
	0 1 2 3	Seeks intelligently opportunities for serving others.
	0 1 2 3	Has faith in others.
	0 1 2 3	Does not indulge in injurious or debasing practices.
	0 1 2 3	Faces facts squarely and does not allow himself to be misled by prejudices.
	0 1 2 3	Considers candidates from the standpoint of the qualities essential for leadership, and elects a person for no other reason than his fitness for the position.
	0 1 2 3	Supports the right and opposes the wrong whenever occasion arises.

SCALE H

Score in Points..... Average Score in Per Cent

Score in Per Cent..... on Scales H and... ....

Name..... Age....yrs....mos..... Sex....Grade....

School..... Pupil marked by..... Date.....

3 X ..... = ...	0 1 2 3	Takes seat in assembly quietly.
	0 1 2 3	Walks with a light step resulting from a feeling of "uplift" throughout the body.
	0 1 2 3	Offers book to visitors or to others who have none.
	0 1 2 3	Does not pose.
	0 1 2 3	Avoids getting wet, getting chilled, or cooling off too suddenly after play.
5 X ..... = ...	0 1 2 3	Volunteers in the recitation.
	0 1 2 3	Avoids abruptness of speech when addressing a person or replying to a question.
	0 1 2 3	Hands work in on time, including home assignments.
	0 1 2 3	Employs the most efficient methods of work, such as the use of short cuts in arithmetic.
	0 1 2 3	Does not worry.
	0 1 2 3	Makes or otherwise provides such apparatus and materials as are needed for carrying out his project.
	0 1 2 3	Remembers by letters or inquiries those who are sick.
	0 1 2 3	Enjoys working and playing with others.
	0 1 2 3	Returns promptly and in good condition articles loaned to him by another.
	0 1 2 3	Verifies tentative conclusions on the basis of further observation and experimentation.
	0 1 2 3	Makes the best of his misfortunes and takes disappointments bravely.
7 X ..... = ...	0 1 2 3	Follows the rules of the game scrupulously.
	0 1 2 3	Forgives wrongdoing in others, even when it has occasioned personal loss or annoyance.
	0 1 2 3	Craves real merit rather than external distinction.
	0 1 2 3	Takes pride in his group and in the school, and tries to foster the right kind of spirit.
	0 1 2 3	Studies civic problems and the needs of the community.
	0 1 2 3	Does not take the property of others without their consent.
	0 1 2 3	Holds to what he thinks is right, unmindful of ridicule or other unpleasant consequences to himself.
	0 1 2 3	Appreciates other nations and races and their contributions.

COLLEGE NEWS AND DEPARTMENTAL NOTES

TRUSTEES

At a meeting of the Board of Trustees of Teachers College, November 10, a gift of $100,000 was announced from Mr. Felix M. Warburg, a Trustee of the College, for the founding of a chair of Civic Education in memory of Mr. Jacob H. Schiff. This gift enables the College to make more vital than ever before the work it is now doing in training for better citizenship, which includes (1) special courses for teachers of scouting and recreational leadership, where the opportunities are especially rich for making pupils aware of their relations to their civic and social groups; (2) courses for training teachers of English for foreigners; (3) courses for instructors in the Americanization of the foreigner in coöperation with the State Department of Education.

These opportunities for the preparation of teachers are being supplemented by special researches to improve citizenship training, which has been made possible through the appointment of Dr. Albert Shiels as associate director of field studies in the recently established Institute of Educational Research of Teachers College. Through this institute research in education is being placed on the same basis as that in medicine and engineering. Dr. Shiels is well known in New York as former associate superintendent of schools and former director of the department of research and investigation under the New York Board of Education. He was later superintendent of schools at Los Angeles, California, for six years. His present work at Teachers College is to direct research and field studies in civic education for the purpose of making available for teachers the best practice gleaned from experiments now being conducted in many cities in this country.

The Trustees also announced further provision for the endowment of the department of nursing through a gift of $50,000 from Mrs. Helen Hartley Jenkins. This gift supplements one of $150,000 made by Mrs. Jenkins in 1910 for the same purpose. Through the work of the department of nursing of the College the standards of nurses' training throughout the country have been materially raised during the past twenty years. The College instruction in this field is of an advanced type intended only for registered nurses who have already graduated from hospital training schools. Through the instruction at the College these nurses are prepared to be teachers in schools of nursing, superintendents of hospitals, or public health nurses. From 6 students in 1901 the enrollment has grown to 486 registered nurses in 1921. Altogether, including attendance on summer sessions, some 3,000 nurses have received instruction in this department in the past twenty years.

The Trustees of the College announced the appointment of Dr. James F. Hosic, of the Chicago Normal College, as associate professor of education, to have charge of the extramural courses of Teachers College. They also announced the appointment of Dr. Rudolph Pintner, of Ohio State University, as associate professor of educational psychology.

BIOLOGY

The Lippincott Company has published for Professor Jean Broadhurst a little book of health for children under

the title *All Through the Day the Mother Goose Way.*

Two advanced students in the department of biology will present at the next meeting of the Society of American Bacteriologists preliminary papers on practical problems worked out under the direction of Professor Broadhurst.

Miss Jane Williamson, assistant in the department since February, 1920, has been awarded a Carnegie research scholarship for the current year, and has returned to Scotland to continue her bacteriological investigations of food fishes.

EDUCATIONAL ADMINISTRATION

Assistant Superintendent P. C. Packer, of Detroit, Mich., will begin his work in February as an associate in the department of educational administration. Superintendent Packer has been teaching during the fall at the University of Iowa.

The department of educational administration has been recently represented in the following state and institute programs. Professor N. L. Engelhardt spoke before the State Association meeting at Omaha, Neb.; and before the city conventions at McKeesport, Erie, and Waynesboro, Pa.; St. Joseph, Mo.; and Montpelier, O. Professor E. S. Evenden addressed the New York State Teachers' Association which met at Buffalo.

Professor Engelhardt is acting as adviser to the State Education Department of Harrisburg, Pa., in the survey of school buildings and the consequent development of a school building program which is being made by the Department for the city of Philadelphia.

A volume entitled *A Survey of the School System of Hackensack, N. J.*, made under the direction of Professors Strayer and Engelhardt, has been issued by the Board of Education, Hackensack, N. J.

The reports of the survey of Baltimore, made during the college year 1920–1921, under the direction of Professor Strayer, may be secured from the Wm. G. Albrecht Company, Baltimore, Md.

EDUCATIONAL SOCIOLOGY

During the autumn Professor David Snedden addressed the following educational meetings: the Northern Indiana Teachers' Association on October 14; the high school teachers of Oklahoma in conference at the State University, Norman, Okla., on November 3 and 4; the Virginia State Teachers' Association on November 24 and 25. On December 2 Professor Snedden was one of the speakers before the New York section of the Association of Teachers of Mathematics of the Middle States and Maryland. He discussed the general topic "Mathematics in the Junior High School."

The department is coöperating with the East Side Y. M. C. A. in New York City in developing work sheets and other means of individualizing vocational instruction and training.

The World Book Company has in process of publication a book for teachers prepared by Professor Snedden under the title *Sociological Foundations of Civic Education.*

ENGLISH

Professor Allan Abbott addressed the National Council of Teachers of English, which met in Chicago the latter part of November, on the subject of standard tests for English teachers. He is now working with a committee of the Council in the preparation of a series of tests of the various kinds of knowledge and skill needed by English teachers; and has the promise of coöperation in standardizing the tests from over a hundred instructors in methods courses, from supervisory officers and from heads of departments from all parts of the country. Certain types of questions are being experimented with in the methods courses at Teachers College this winter, the

results of which will help to determine the type of tests that will finally be worked out.

Professor Elizabeth C. Cook addressed the New York Society for the Experimental Study of Education on Friday, December 9, on the experiment now being made in two of her classes in the technique of reading, stressing particularly the improvement in speed through selective reading. The results, which have been correlated with standard intelligence tests, show a positive correlation between general intelligence and rapid, selective reading of fiction, according to the purpose and point of view of the reader.

A very artistically furnished and comfortable reading room has been opened on the first floor of Whittier Hall through the efforts of a committee of students, headed by Miss Alma Junghans, which succeeded in collecting last spring a considerable sum of money for the venture. Members of the English department and the Bryson Library staff coöperated in buying a collection of books, which was augmented by gifts from the Faculty and students. The room was formally opened on Sunday, November 13, with a supper party and an informal address by Mrs. Marguerite Wilkinson. It is reported that other authors, including Professor John Erskine, will later give readings.

FOODS AND COOKERY

Professor May B. Van Arsdale has been appointed chairman of the personnel division under the new organization of the National Board of the Young Women's Christian Association.

The class in Training for Demonstrations in Cookery, under Miss Mary I. Barber, is coöperating with the household arts education department of Teachers College in field work in Public School No. 1, in the Bronx. Different members of the class are volunteering to give demonstrations before groups of mothers as well as groups of young boys on two afternoons a week.

A course in Candy Making, under Miss Day Monroe and Miss Mary I. Barber, which began in the fall, was a departure from the usual schedule of cookery courses. It was introduced to meet the requests of students who feel that a knowledge of candy making is necessary in their teaching, and in such school activities as bazaars, candy sales, and parties. Seven laboratory periods were given with one point of credit. Only types of candy which can successfully be made in school or home kitchens were taught—such as caramels, brittles, fancy fudge, and fondant. The course will be repeated in the spring session. A book on candy making is in preparation.

In the course in Investigation Cookery, work is being done on the proportions of ice and salt for the packing of ice cream—a continuation of the work on freezing ice cream, reported in THE RECORD for May, 1921. Another experimental problem is the amount of beating which should be given a cake batter after all the ingredients have been combined. Through the courtesy of the Hobart Company the students are fortunate in having a small electric mixer, designed for the home kitchen. This enables them to standardize manipulation, and therefore to study more readily the effect of beating upon cake texture. At the meeting of the American Home Economics Association in June plans were made for a coöperative investigation of mayonnaise making. The students are working on this problem in coöperation with other colleges, and a report of the work will be given by Dr. M. Mark, of Simmons College, chairman of the group conducting this work. The work in coöperation with the department of biochemistry of Teachers College, namely, trying to solve the question of the effect of the pressure cooker upon the vitamin content of foods, is still going on.

The course known as the Buying of Food, offered for the first time this fall, has been developed with the coöperation of specialists from the New York

City markets who have come to the College as speakers. This course deals with food selection by the housewife; hence, the talks have been given from the viewpoint of what she should know about each food product when she goes marketing. For the lessons on fish, cheese, and butter, exhibits were brought by the dealers who came to lecture. A representative of the City Department of Health talked on rules for selling milk and grades of milk. It is believed that this method of approach to the subject of buying is more valuable than talks by an instructor, since it gives the students the business viewpoint and a respect for the extensive knowledge which a good dealer has. Exhibits at the College furnish a better introduction to a special topic than trips to the markets because there is plenty of time for observing and for asking questions—which is not the case with a large group in a busy market.

Two successful food forums have been conducted by the department this fall—the first on October 21 on the subject of "Meat Purchasing and Weights and Measures" and the second on November 14 on "New York State Apples." The forum on meat buying came as the result of numerous requests from women all over the city for a discussion of their duties toward the butcher and the butcher's responsibilities to them. An exhibit was given showing the waste in meat in trimming, cooking, and at the table, and the need for careful buying. Through the courtesy of the State Department of Farms and Markets there was an exhibit of household scales and a talk on buying by weight given by Mr. W. T. White, director of the Bureau of Weights and Measures. For the exhibit of New York State apples there were more than seventy-five varieties of apples shown. During the afternoon and evening, demonstrations on the use of apples were given by Miss Anna Barrows, Miss Mary Barber, and the class in Demonstration Cookery.

Members of the class in Food Marketing Problems are carrying on investigations under the direction of Miss Day Monroe in coöperation with the New York office of the State Department of Farms and Markets. The results of some of their investigations will be popularized for presentation to a food forum audience in the early spring.

HOUSEHOLD ARTS EDUCATION

Students in the department of household arts education are coöperating with Dr. Abbey Porter Leland, principal of Public School No. 1, in the Bronx, in the operation of a community center. Classes in cooking, sewing, and recreation are being conducted for girls and mothers. There are also classes in recreation for boys.

The Widows' Pension Club and also a club at Brick Church House for young women interested in home furnishings are being organized again this year through the efforts of members of the department.

A committee of students from the course known as Supervision in the Household Arts has been working on a syllabus of health education for the use of grade teachers. Concrete material for the first six grades is being prepared and it is hoped that this may be ready for publication by May 1.

HOUSEHOLD ECONOMICS

The new course in Housing which was given for the first time last year is offering a study of social and economic factors in this field which is proving interesting to students. Special lectures have been given before the class this fall by Miss Blanche Gaery, executive secretary of the National Board of the Y. W. C. A., on housing for women, and by Mr. John J. Murphy, secretary of the Tenement House Committee of New York, on legal standards for the control of housing. The class has done field work through visiting the Russell Sage Foundation's experiment in suburban

housing at Forest Hills, the Junior League Hotel for working girls, and similar examples of good housing. The conference on Housing for Girls held in New York in November afforded the class an unusual opportunity. This course on the housing problem will be offered again during the coming summer session.

Two members of the Household Budget-Planning course of last summer are now engaged in budget consultation work in banks—Miss Donaldson at the Bridgeport, Conn., Savings Bank, and Miss Katherine Howard at the Empire City Savings Bank, New York City, while other members of the class are stressing budget work in college courses, and in public school and extension teaching. Miss Frances Kelley, a former student of the department, and now city supervisor of home economics in Minneapolis, brought out recently a children's personal account book, the use of which is made a required exercise in the upper-grade home economics work of that city. While at Teachers College Miss Kelley made a study of the teaching of children's budgets and family budgets to children in grade schools and high schools in American cities, the results of which indicated a growing interest in having school children keep personal accounts.

Miss S. Agnes Donham, educational secretary of the Society for the Promotion and Protection of Savings, Boston, lectured before an open meeting of the class in economics in December on "Savings and Thrift Promotion." Miss Sara L. Oller, who had her training in the budget courses at Teachers College, is associated with Miss Donham in carrying on a budget consultation service in several savings banks in Boston, and in promoting thrift in industrial establishments and in schools. Miss Donham reported an increasing demand for women trained in home economics in positions involving budget and thrift promotion work in banks.

Professor Benjamin R. Andrews was the official delegate from Teachers College to the recent inauguration of President Thomas, of Pennsylvania State College, and in that connection prepared a paper on "The Proposed University of Pennsylvania," which will appear in a forthcoming number of *American Education*.

Miss Gladys Ward, a former student, is acting as assistant in the department. Miss Ward was formerly city home economics extension worker in Baltimore, and later director of a cafeteria in Denver. She has also been giving a dietetics course at Hunter College this winter. Miss Ward recently addressed the New York City chapter of the Girls' Friendly Society on "Food in Relation to Health."

HOUSEHOLD AND INSTITUTION ADMINISTRATION

Professor Emma H. Gunther is to be away on sabbatical leave during the spring session. She is going to China as a lecturer for the Institute of International Education. Miss Lydia Ray Balderston, of the department, expects to go with her. They will spend the first month at Canton Christian College and the True Light Middle School, where they will lecture on the organization of courses in practical arts, emphasizing especially the work along the lines of household management. Later Miss Gunther expects to visit schools at Shanghai, and Ginling College at Nanking. She will spend about six weeks at Yen Ching Women's College, which is part of Peking University. At each of these places there are on the staff Teachers College graduates.

At the New York State Teachers' Association meeting, held at Buffalo November 21–22, Professor Gunther spoke on household arts before the home economics section. During the convention there was a Teachers College dinner at which Professor Gunther spoke. Professors Kilpatrick, Evenden and Carney, and Miss Agnes Burke were other guests from Teachers College.

KINDERGARTEN—FIRST PRIMARY EDUCATION

Professor Patty S. Hill has recently returned from rather extended lecture trips. In Maine she spoke before the annual meeting of the New England Association of Day Nursery Workers. In Boston she spoke before the public school kindergarten and primary teachers, and the training school teachers of the city, and also before a board which is attempting to transform a day nursery into a school along the lines of the English nursery school. She lectured in Detroit for three days, giving a series of talks before the kindergarten and first-grade teachers of the public schools, and before the Detroit Teachers College. On December 28 she spoke at the general session of the New Jersey State Teachers' Association.

A pamphlet has just been issued by the United States Bureau of Education which was compiled from material gathered from this department under the supervision of Miss Grace L. Brown, who has gone to the Cleveland School of Education. Credit is given in the monograph to the department and to Miss Brown.

MUSIC

The department of music has resumed this fall a custom which was interrupted by the war—that of giving a series of informal recitals on Wednesday afternoons in Milbank Chapel. The first, on November 2, was a lecture recital of Hungarian music, by Mr. Adolph Alfred Kugel, assisted by Mrs. Lillian Sloane at the piano; the second, a joint piano and voice recital by Mrs. Cowl and Mr. Jolliffe; the third, a costume recital of child songs and Indian songs by pupils of Mrs. Mehan,—Helen Porter and Augusta Van Atta, with Mr. Harry Planten at the piano; the fourth, a song recital by Miss Helen Latham; the fifth, a recital of piano, violin, and recitation, by Dr. and Mrs. Robert B. Ludington and Miss Loris Gratki; the sixth and last, on December 14, Christmas music by Mr. Jolliffe, students of the department, and the audience. These recitals have filled the chapel and have provided a pleasant hour at the close of the day's work.

Professor Charles H. Farnsworth took part in the annual conference of the Music Teachers' National Association which met in Detroit on November 28, 29, and 30.

Mr. Jolliffe has been singing this fall in Philadelphia, Syracuse, Wilkes-Barre, Washington, Conn., Amherst, Lancaster, and Stamford. He sang the *Elijah* and Verdi's *Requiem Mass* at St. Bartholomew's in New York City, and has an engagement with the Handel Hayden Society of Boston to sing on Easter Sunday.

Dr. Gatewood, of the Edison Music Research Department, is conducting through the department of music of Teachers College some experiments on the effects of music with a group of Whittier Hall girls.

NUTRITION AND FOOD ECONOMICS

Twelve nutrition classes with a total registration of about 175 children are being conducted at Public School No. 43 by students of the department of nutrition. The two nutrition workers maintained at the school by the New York County Chapter of the American Red Cross, Miss Katherine White and Miss Dorothy Simpson, are Teachers College graduates trained in nutrition and experienced in social case work. They assist Professor Rose in the supervision of the students' work, which consists not only in the conduct of classes but in home visiting, record keeping, and other activities incident to this kind of field work. Since this work was undertaken at Public School 43, more than 350 families have been under care. The teachers in the school speak warmly of the improvement in many of the children and give the work their hearty support.

This same group of students is also

conducting the class sessions of a nutrition class at the Recreation and Settlement House, 186 Christie Street, in coöperation with Miss Spence, the nurse in charge. Miss May Foley, one of the members of the group, has supplied a health play written by herself and a friend, which is to be presented by this class to their mothers and friends in the near future.

Professor Henry C. Sherman was made chairman of a vitamin symposium at the annual meeting of the American Chemical Society and in collaboration with Dr. S. F. Smith, specialist in biological and food chemistry, United States Department of Agriculture, has prepared for the society a monograph on vitamins which will be published soon. A brief review of the study of vitamins with especial emphasis on the physiological aspects was contributed by Professor Sherman to *Physiological Reviews* and published in the October, 1921, number. At the November meeting of the Society for Experimental Biology and Medicine, Professor Sherman and Miss Muhlfeld made another report on the progress of the investigation of growth and reproduction upon a simplified food supply which Professor Sherman has been carrying on for some time. Professor Sherman read a paper on "The Influence of Food upon Mother and Young during the Lactation Period," which will appear in the *Proceedings* of the Society for November. Professor Sherman addressed the semi-centennial meeting of the American Public Health Association in November on "Food and Health." He has been made an honorary member of the Harvey Society.

One of the most interesting additions to the equipment of the nutrition department is the respiration apparatus for a rat, designed by Dr. Benedict of the Carnegie Institution in Boston, which was installed here for use in the coöperative study of the metabolism of the rat. Miss Margaret Brawis has been appointed special technician in connection with this work. Twelve graduate students have been mastering the technique of basal metabolism determinations on the human subject and are participating in the study of basal metabolism in young girls, with the Benedict Portable Respiration Apparatus, and also with the Tissot Apparatus.

Professor Mary S. Rose is reporting some research work of the department in an article entitled "The Digestibility of Rolled Oats Prepared in Various Ways," in the January number of the *American Journal of Home Economics*. She is also contributing to the February number of the *Journal of Biological Chemistry* an article on "The Digestibility of Some Raw Whites of Eggs," which is a detailed description of experiments carried on here.

Professor Rose spent the 6th of December at the Massachusetts Agricultural College, Amherst, Mass., in conference with the home economics extension workers on recent advances in the science of nutrition and nutrition problems of field workers. On November 25 she addressed a joint meeting of the New York Nutrition Council and the New York County Medical Society at the Academy of Medicine, on "Some Practical Applications of our Newer Knowledge of Nutrition." Professor Rose has been elected a member of the Harvey Society.

PHYSICAL EDUCATION

Professor Thomas D. Wood was elected president of the American School Hygiene Association at the annual meeting of this organization which was held in December in New York City. Special attention will be given in the Association's program this year to the problem of professional training of teachers for health work in the schools.

Professor Jesse F. Williams spoke at the meeting of the Society of College Directors of Physical Education held in New York City on December 28. He presented the opportunities offered by Teachers College for graduate

training in physical education. Dr. Williams has been elected a member of the executive committee of the American Physical Education Association. He is also serving as president of the Physical Education Society of New York and Vicinity.

The Conflict, a health masque in pantomime, has been prepared by Miss Gertrude K. Colby, with an introduction by Professor Wood. It may be obtained from A. S. Barnes and Co., publishers, New York City.

RELIGIOUS EDUCATION

The members of last year's class in Problems of Social-Religious Work have prepared a *List of Books for the Social-Religious Worker* which has been printed and circulated in pamphlet form. One hundred dollars will purchase all the books recommended. A friend of the department has made it possible to keep a sample library in the office of the department.

Professor George A. Coe and Miss Adelaide T. Case are members of a committee of the Religious Education Association which is undertaking an educational survey of week-day religious education. Professor E. L. Shaver, of Conway, Ark., an alumnus of Teachers College and of Union Theological Seminary, has been appointed surveyor and has been granted four months' leave of absence for this special work. The findings of the survey will be reported at the Religious Education Association convention in April.

Miss Jessie Moore, a graduate of Teachers College, whose major work was in primary education and religious education, has been appointed assistant in the department of religious education with especial responsibility for the supervision of field work.

The alumni of the department of religious education have organized as a branch of the Alumni Association. The officers elected are: Chairman, Miss Elsa Lotz; secretary and treasurer, Miss Georgine Houston.

NORMAL SCHOOL EDUCATION

Professor William C. Bagley spent the month of October visiting teacher-training institutions in the Middle West to acquaint himself with developments in the field. The schools visited were the State Teachers Colleges at Winona, Mankato, St. Cloud, and Moorhead, and the University at Minneapolis, Minn., the State Teachers College at Greeley, Colo.; the Illinois State Normal University and the Eastern Illinois State Teachers College; and the Cleveland School of Education.

The positions of associate in the department of professional education of teachers are filled by Mr. Edgar D. Randolph, on leave of absence from the Colorado State Teachers College, and Mr. Hugh Stuart, on leave as superintendent of schools, Swarthmore, Pa., and instructor in Swarthmore College. The new assistants are Miss Edith Waterfall, on leave from the University of Bristol, England, and Miss Rosamond Root, formerly of the Northeastern Missouri State Teachers College.

The Teacher-Training League of Teachers College is active this year with a present membership of sixty. The officers are: President, Mr. Joseph E. Avent; vice-president, Mr. Robert B. Raup; secretary, Mrs. Cora M. Martin; and treasurer, Miss Ella M. Smith. The October meeting was a joint picnic with the Rural Club on the Palisades. At the November meeting, Dr. Bagley gave a review of the outstanding developments noted during his annual visit to teacher-training institutions.

Dr. Lester M. Wilson's dissertation, *Training Departments in the State Normal Schools of the United States*, has recently been issued by the Eastern Illinois State Teachers College.

The dissertation by Dr. Walter Scott Hertzog, who received his Ph.D. degree in 1921, on the *State Maintenance of Teachers in Training* has recently been published by Warwick and York, Baltimore.

RURAL EDUCATION

An experimental rural school was opened in September under the direction of the department of rural education. This school is located in a typical rural community near Allamuchy in Warren County, N. J. Thirty-seven children are enrolled, fifteen of whom are in the beginning class. The work covers that of all the grades. Miss Marcia Everett, formerly of California and a recent graduate of Teachers College, is the teacher. Funds for this enterprise have been supplied through the generosity of Mr. Felix Warburg, one of the Trustees of the College.

Dr. Fannie W. Dunn, instructor in the department, has been appointed editor-in-chief of the new *Journal of Rural Education*, the official publication of the Department of Rural Education of the National Education Association. The magazine is designed to serve as a clearing house for rural education and to report constructive programs and policies developed in this field throughout all parts of the country.

Dr. Warren H. Wilson lectured recently at the state agricultural colleges in Stillwater, Okla., and Fort Collins, Colo., before the state conference on rural life in Richmond, Va., and also before other state meetings in North Carolina and Tennessee.

Dr. Dunn spoke during the same period in San Antonio, Tex., in Maryville and Warrensburg, Mo., and before the Minnesota State Teachers' Association in Minneapolis; while Professor Mabel Carney has filled recent engagements before the State Teachers' Association meetings in Rhode Island, Delaware, Berks County, Pa., southwestern Ohio, and Canyon, Tex.

SECONDARY EDUCATION

In the survey of the schools of Philadelphia, which has been conducted during the past twelve months by the Pennsylvania State Department of Public Instruction, Professor Thomas H. Briggs has directed the work in the field of secondary education. Professors F. W. Johnson, E. K. Fretwell, and J. M. Gambrill have made studies of special topics in the field.

During the winter session Professor Briggs has spoken before the Northern Indiana State Teachers' Association, the English and the library sections of the New Jersey High School Conference, the West Virginia State Teachers' Association, and the Unitarian Men's League at Boston. He is to be away on sabbatical leave during the spring session and intends to spend his time in visiting schools and in writing.

The mimeographed outlines of topics prepared by committees of students in several courses last summer have proved so helpful that they have been widely used this year. One of the reports, that on the social control of junior high schools, is being published in *Educational Administration and School Supervision*.

TEXTILES AND CLOTHING

The department of textiles and clothing is offering to its students a series of talks by specialists on subjects of definite interest to them. A very interesting and helpful talk on the subject of "Fashion and Wearing Apparel" was given by Dr. Paul H. Nystrom, of the Retail Research Association. Miss Margaret Rapeleye, of the Liberty Paper Company, gave a demonstration of the making of a paper dress form. She is a very skillful demonstrator, giving these demonstrations throughout the country to schools and agricultural colleges. Miss Gertrude Whiting, president of the Needle and Bobbin Club, spoke to the students informally on the subject of "Lace: Its Use and Abuse." Miss Whiting has made an extensive study of lace and has herself a very valuable collection of laces.

HORACE MANN SCHOOL

An informal survey of the achievement of pupils in the Horace Mann School has been made by Professor William A. McCall and his students.

Standard tests were given in silent reading, arithmetic, spelling, and composition in all grades, from the second to the eighth, inclusive. In general, the results show that the work of the School in these subjects is about up to public school standards in the third grade, but increases from that grade until in the sixth, seventh, and eighth grades the Horace Mann School pupils are about one year and a half ahead of public school pupils.

The Thorndike Intelligence Examination which was used for admission to Columbia last year was recently given by Dr. Clara F. Chassell, the school psychologist, to the pupils of the senior class in the girls' high school. In general, the results indicate that the Horace Mann girls at the *beginning* of their senior year did as well as the boys who took these tests at the *end* of their senior year.

On November 4, Principal Henry C. Pearson spoke on school reports before the parents and teachers at the Park School, Brookline, Mass.

On November 22, Miss Agnes Burke, teacher of the first grade, spoke on project teaching before the New York State Teachers' Association at Buffalo. Miss Burke is participating in extramural courses on primary methods which are being given at Newark, N. J., and Norwalk, Conn.

On November 4, Miss Mildred Batchelder, teacher of the first grade, spoke on the project method before the County Teachers' Association at Worcester, Mass.

THE LINCOLN SCHOOL

Mr. Earl R. Glenn attended the twenty-first annual meeting of the Central Association of Science and Mathematics Teachers which was held at the Soldan High School, St. Louis, on November 25 and 26. As a part of the program Mr. Glenn read a paper, "The Conventional Examination in Physics Versus the New Types of Tests," which summarized the data and conclusions secured by a group of coöperating physics teachers from a series of preliminary physics tests that were given during June, 1921. This coöperative testing program is to be extended during the present year to include a larger number of typical high schools.

Mr. Raleigh Schorling, of the department of mathematics, gave a series of talks at St. Louis on November 25 and 26, the most important being a talk to the College Club on the topic "The Curriculum of Grades Seven, Eight, and Nine." On Saturday, November 26, Mr. Schorling addressed the Central Association of Science and Mathematics Teachers on the topic "Some Problems Met in the Scientific Construction of Mathematics Courses for Grades Seven, Eight, and Nine."

Mr. Arthur D. Whitman is making a study of the records of the College Entrance Examination Board with a view to ascertaining the reliability of the results as indicating success in college. This study is being made at the request of the Board.

ADMINISTRATION CLUB

A very complete program of meetings for the Administration Club has been laid out for the current year. The club is meeting each month at the home of Dr. and Mrs. George D. Strayer, where a professional and social program is enjoyed. A second meeting is being held each month at the College. Each one of these meetings is devoted to a topic of national importance. Dr. Strayer addressed one of the meetings, his topic being "National Programs in Educational Finance." Dean James E. Russell discussed at the December meeting "Some Principal Factors in College Administration." Other speakers for the year will include Dr. Thomas E. Finegan, commissioner of education for Pennsylvania, Professor Ellwood P. Cubberley, of Leland Stanford University, Professor Robert M. Haig, of Columbia University, and Professor Edward C. Elliott, of the University of Montana.

RURAL CLUB

The Rural Club of Teachers College organized in September for this year with the following officers: President, Miss Florence M. Hale, state rural agent, Augusta, Me.; vice-president, Mr. Homer T. Phillips, formerly field director of the Missouri Tuberculosis Association; secretary, Miss Anna D. Halberg, formerly instructor in Wisconsin county training schools; and treasurer, Mr. Harrison L. Euler, formerly principal of the rural high school in Bucyrus, Kan. An interesting series of programs and events has since been conducted, including a joint picnic with the Teacher-Training League, a lecture by Mrs. Marie Turner Harvey of the Porter Rural School at Kirksville, Mo., and a Christmas party for foreign students.

SECONDARY CLUB

The Secondary Education Club has been very active during the past term. In addition to its professional meetings it has held several social affairs which have proved very popular. At its meeting on November 22, Dr. Otis W. Caldwell addressed the club on the work of the Lincoln School, of which he is director. Dr. Caldwell discussed in a most interesting way the organization of the School, its aims and purposes, and illustrated its work by describing in detail the collection of data for biological study and the recently developed plan for student participation in government. On December 16 the program consisted of short talks on secondary education by members of the club from foreign countries. Miss Christina Stael von Holstein of Stockholm, Sweden; Miss H. D. Bagnell, of Norfolk, England; Miss H. F. Sallee, formerly of the Eliza Yates School, of Shanghai, China; Mr. B. J. Divan, of Ahmedabad, Bombay, India; and Mr. W. Malan, of Wellington, Cape Province, South Africa, were the speakers.

ALUMNI ACTIVITIES

THE ALUMNI FUND FOR A NEW LIBRARY

As this number of the TEACHERS COLLEGE RECORD goes to press the campaign for raising the Alumni Library Fund is approaching its end. The amount subscribed by alumni up to December 1, 1921 was approximately $45,000. This sum has been given by about 650 former students.

The office of the field secretary has sent out over 50,000 pieces of mail since September 15. A booklet entitled "A New Library for Teachers College" was the first piece of publicity to be issued. This set forth the growth and needs of the College and explained the organization of the alumni campaign. This was followed shortly by a folder with a pledge card attached and also a pamphlet entitled "Teachers College, A Contribution to Education," an address delivered by Dr. William H. Kilpatrick before the Alumni Conference last year. The third and last piece of publicity material sent out was in the form of a miniature pledge card and a short message reminding the alumni of the close of the campaign. In addition, a large number of letters have been sent to special groups of former students.

The response thus far from the alumni has been much appreciated by the Fund Committee. Especially encouraging have been the messages of gratitude to the College which have accompanied a large number of the contributions. The student body, student clubs, and other organizations connected with the College have made splendid efforts to coöperate in raising the fund. The activities of many of these organizations are reported elsewhere in this issue.

The alumni committee in charge of the fund looks for a large number of contributions before the campaign closes, and fully expects to be able to present to the Trustees of the College a total contribution from the alumni and former students indicative of the affection and loyalty which they have for the College.

AN ORIENTAL ENTERTAINMENT FOR THE FUND

As the president of the Chinese Educational Club of Teachers College, Mr. Yuan-Huai Ou, expressed it: "The Chinese students are very thankful for what Teachers College has done and is doing for them, and we want to express that gratitude by helping to raise the Alumni Fund." As a means of expressing that gratitude, the Chinese Educational Club presented at the Horace Mann Auditorium on the evening of November 29, an Oriental entertainment.

Dean Russell introduced the program with words of appreciation for the civilization which the Chinese students represent and for that enthusiastic spirit of coöperation and helpfulness which prompted the Chinese Educational Club to be among the first student organizations of the College to help in raising the Library Fund.

The program which followed was presented entirely by Chinese and was unique. The Chinese hangings and stage decorations presented a picture of oriental color. The Chinese children who participated especially captivated the audience and brought the realization that Teachers College in helping the Chinese students is sending its service to many children in China.

The program included Mother Goose Tales of China, The Humorous Side

of Chinese Handwriting, Instrumental Trio, and a playlet based on Chinese folk-lore entitled "The Cow-Herd and the Weaving Maid."

The proceeds of the entertainment after expenditures were deducted amounted to $300, and this was presented as the contribution of the Chinese Educational Club of Teachers College to the Library Fund.

STUDENT MASS MEETING FOR THE LIBRARY FUND

Under the direction of the Students' Executive Council the student body of Teachers College has undertaken its part in the campaign which the alumni are conducting to raise funds for the new library building. Their participation in the raising of the fund was carried on under the caption "A Christmas Gift to Teachers College." Mr. George Howard, Jr., of Tarboro, N. C., was the director of the movement with the following assistants: Miss Florence Hale, of Augusta, Me., in charge of the student mass meeting; Mr. D. H. Eikenberry, of Lapel, Ind., in charge of publicity; Mr. A. M. Proctor, of Goldsboro, N. C., in charge of the canvassing; and Mr. T. A. Hendricks, of Winchester, Va., in charge of extension students.

The appeal was placed before the student body in the form of an opportunity to help the College. Previous to a large mass meeting every available space on the bulletin boards and in the corridors was filled with posters and bulletins. In the main corridor an automatic stereopticon pictured to those passing the need of a new library by means of views of the crowded conditions, with suggestive captions and headings.

On Tuesday, December 6, at 11:30, Dean Russell at the request of the Student Council dismissed all classes and the student body assembled in the Horace Mann Auditorium. Dr. Fretwell, of the Faculty, led the group in the familiar songs of the College. Mr. Howard, the director of the drive, set before the student body the object of the meeting and the organization of the student campaign. Mr. Proctor spoke in a semi-humorous vein on "What Teachers College Means to Me."

The procession of Teachers College then followed. One student from each state in the Union marched in procession across the stage, bearing a banner with the name of his or her state upon it, together with the number of students from that state who have attended Teachers College during the past five years. This procession was followed by another made up of the foreign students now attending the College. Each foreign student carried his banner decorated with the colors of his country and giving the enrollment at Teachers College of the students from his country during the past five years. In several instances the foreign students wore their national costumes. The foreign countries represented were: Czecho-Slovakia, Ecuador, Mexico, Armenia, Holland, Norway, China, Ireland, British West Indies, Syria, Switzerland, Denmark, Siberia, Nicaragua, South Africa, Italy, Korea, Peru, Greece, Canada, Japan, India, the Philippine Islands, Iceland, Palestine, Scotland, England, and Sweden. At the close of the procession the representatives with their banners were seated in front of the stage and stood in rows around the auditorium, completing a picture of the widespread influence of Teachers College throughout this country and the entire world.

Following the procession Miss L. H. Meek, of Washington, D. C., gave a splendid talk on "Teachers College and the World," in which she brought to the students examples of the remarkable educational work which is being done by former students of Teachers College in posts of importance throughout the world. The last speaker was Mr. Harry C. McKown, of Gilson, Ill., who directed the attention of the students to the unfortunate conditions under which library work at Teachers College must be done.

The chairman of the meeting then made a direct appeal to each student to make a Christmas Gift to the fund, and the audience was dismissed. Literature concerning the Library Fund, together with a pledge card, was placed in the hands of every student. At the present writing the amount subscribed by the student body cannot be stated.

HORACE MANN SCHOOL JOINS ALUMNI DRIVE

Below follows a preliminary report made by Mrs. May S. Ames, president of the Parents' Association of the Horace Mann School.

New York City, December 13, 1921

Mr. R. G. Reynolds
Field Secretary, Alumni Association
Teachers College, New York City

My dear Mr. Reynolds:

Inclosed please find a preliminary report of the activities of the Faculty and Parents' Association of the Horace Mann School in behalf of the Alumni Library Fund. As the appeal for contributions is still going on, I cannot at this time report to you the amount of money raised by the Association. I shall be glad to turn it over to you as soon as all the matters connected with the undertaking are closed. In the meantime, when it is realized that the affair was arranged and carried to such a successful conclusion in only a few days, with several thousand persons in attendance, it must be regarded as a real achievement.

Very sincerely yours,

(Mrs. W. G.) May S. Ames
President Parents' Association
Horace Mann School, New York City

Mrs. Ames' report is as follows:

General recognition of the great influence Teachers College exercises over American education—the depth and breadth of its effects, in theory and practice—and of the fact that it is an institution absolutely essential to maintain and give added strength to the whole fabric of civilization, is manifest. General recognition is also manifest of the need of carrying on its inestimably valuable work of equipping successive legions of torch-bearers of enlightenment; research in almost all lines of education; preparation of teachers of education; training of administrators and other educational leaders; not only among students of this country, but all those, from whatsoever part of the world they may come, who wish to be equipped to teach and enlighten their fellow-beings.

Among many to recognize that a contribution to the Teachers College Library Fund means an investment in a greater, better, and morally stronger America, is Horace Mann School, which, through its Faculty and Parents' Association, spoke eloquently in this connection on Saturday, December 3. For the purpose of raising a sum of money to be added to this fund, and to acknowledge its debt of gratitude to Teachers College, a series of entertainments was held in the school, both in the afternoon and evening. The afternoon program consisted of music by the orchestras of the Boys' and Girls' High Schools, bridge parties, and a motion picture performance—*Treasure Island* being the feature picture. The evening program consisted of vocal music by Mrs. Maurice Wertheim, bridge parties, a presentation of George Arliss in *Disraeli*, and a dance. Tea and other refreshments were served during the day and evening, and home-made cakes and candies were sold. The motion picture films were of the highest type and were furnished by the courtesy of interested patrons of the school.

Sympathy for this worthy cause was proved by the untiring work of the various committees of the Parents' Association, with the teachers of the school coöperating, and by the splendid spirit manifested by patrons and friends of Horace Mann School in their generous response to appeals for contributions and attendance.

The grade mothers, personally and through their class teachers, approached the parents in their respective groups for contributions of food and money, the result being that the whole entertainment was thus provided absolutely without any expense whatsoever to the Parents' Association—a very unique and most gratifying occurrence. In this connection special mention may be made of the fact that the entire janitorial force of the Horace Mann School volunteered its services for the afternoon and evening as its contribution to the Teachers College Library Fund.

The officers of the Parents' Association were most active and untiring in their efforts to plan this benefit, and the fact that it was not necessary to form new committees for this purpose proves that the organization was perfect in every detail. The Social and Lunch-room Committees assumed responsibility for the successful carrying out of the plans made.

MAY S. AMES
President, Parents' Association
Horace Mann School, New York City

EVERYMAN HELPS THE ALUMNI FUND

On Thursday evening, December 15, Edith Wynne Matthison and Charles Rann Kennedy with their company presented *Everyman* in the Horace Mann Auditorium for the benefit of the Alumni Library Fund.

The Advisers' Club of Teachers College was responsible for interesting Mr. and Mrs. Kennedy in the Library Fund, and all the details were most efficiently cared for by members of the club. The *Everyman* Company presented the play at no expense to the club other than their traveling expenses. Those in charge of the fund and all interested in Teachers College appreciate the spirit which prompted the company to coöperate with the College in this generous manner.

The entire seating facilities of the auditorium were sold out and the evening was one of delight to the audience. Through the kindness of Mr. and Mrs. Kennedy and the company, the Advisers' Club was enabled to make a generous contribution to the Library Fund.

IT'S NEVER TOO LATE TO HELP

It is assumed that every former student of Teachers College who reads this will already have had given to him the opportunity to contribute to the Library Fund. However, Teachers College alumni are a busy lot, and you may have put off sending that contribution to the Library Fund which you have always intended to make.

This is to let you know that you may send it now. It will be welcomed. It will be added to the gifts of those other former students who have taken this opportunity to express in this way their loyalty and support to Teachers College.

Make out your check to the Treasurer of Teachers College. Mail your pledge to R. G. Reynolds, Field Secretary, Teachers College, New York City. If you can't spare the whole amount now, make out a pledge payable before March 1, 1924.

TEACHERS COLLEGE DINNER AT CHICAGO ON MARCH 1

The annual Teachers College dinner in connection with the meeting of the Department of Superintendence of the National Education Association will be held in the ball room of the Congress Hotel at Chicago on March 1 at 6:30 in the evening. All arrangements for the dinner have been made. President W. A. Jessup, of the University of Iowa, will preside.

At past Teachers College dinners, it has been impossible to accommodate many former students of the College who have delayed in making reservations. Those who plan to attend the dinner this year are advised to make their reservations early.

If you are planning to attend the Chicago Meeting, the Teachers College dinner should be on your program.

ALUMNI REUNION AND CONFERENCES

The Annual Reunion and Conferences of the Alumni Association of Teachers College will be held at the College on Friday, February 10, and on Saturday, February 11.

The general meetings will be held as usual on Friday afternoon and Saturday morning, while sectional conferences will be held on Friday morning and Saturday afternoon. The Dean's reception will follow the first general conference on Friday afternoon, and

the Alumni Council meeting will precede the second general conference on Saturday morning. This meeting of the council will be one of the most important ever held, for it is proposed to reorganize the Association and make an active working body of it. Every club and graduated class should be represented.

The problem to be attacked by both the general and the sectional conferences is that of defining more definitely and specifically the objectives of education as means of developing good citizens. There will be a discussion not only by leaders of educational thought and practice but also by leaders in other fields than education. Dr. William C. Geer, vice-president of the Goodrich Rubber Company, for example, will speak Friday night on the problem of how the products of the schools fail to meet the needs of industrial life. Other speakers who have been invited to join in the discussions are Dr. John Dewey, Dr. William F. Ogburn, President D. B. Waldo, Dr. Albert Shiels, Dr. William H. Kilpatrick, and Dr. William C. Bagley.

HOW THE NEWS GROWS

One of the real benefits of time spent at Teachers College is the friends and acquaintances which students make while here. The TEACHERS COLLEGE RECORD gladly gives to alumni activities such space as can be used.

The secretaries of the Association gather such news of the alumni in the field as they can. Much important news, however, does not come to their attention. Won't you send them whatever news of former students comes to your attention? Please don't be modest; send them the news about yourself. They will use as many news notes as space will allow. Your interest and coöperation in this matter will be appreciated by the association and by the alumni in the field.

News of interest can be sent to Mr. R. G. Reynolds, field secretary, or to Miss Edith Swan, corresponding secretary, Alumni Association, Teachers College, New York City.

If you or your friends have been appointed to a new position, or have done an interesting piece of work, or have published an educational article or book, give the information to the secretaries. They through the columns of THE RECORD will give it to the other alumni in the field.

WHY NOT A TEACHERS COLLEGE CLUB IN YOUR CITY?

From the reported activities of Teachers College Clubs in this issue of THE RECORD, it is evident that these clubs are becoming popular. The organization of such a club gives former students of the College an opportunity to meet with each other and to talk over matters of common interest.

The best evidence of the usefulness and success of Teachers College Clubs is their increase in number. The Alumni Association welcomes new clubs. Full information relative to the steps necessary for the organization of a club will gladly be given you by Mr. R. G. Reynolds, field secretary of the Alumni Association, Teachers College, New York City.

MISSOURI TEACHERS COLLEGE CLUB

On Thursday evening, November 3, at the Claridge Hotel in St. Louis, an enthusiastic gathering of one hundred and seven former Teachers College students met at dinner and organized a Teachers College Club for Missouri.

The local arrangements for the dinner were splendidly taken care of by a committee consisting of Mr. Robert St. Clair and Miss Constance Brown, of St. Louis. Mr. George Diemer, of Kansas City, was in charge, and Mr. A. L. Threlkeld, of Chillicothe, president of the State Teachers' Association, acted as toastmaster. During the evening music

was furnished by St. Louis school people, and the group, under the leadership of Dr. E. K. Fretwell, of Teachers College, joined in the familiar Teachers College songs.

The guests of the evening from Teachers College were Professors Romiett Stevens, E. K. Fretwell, and Arthur Dean. After the dinner was served, the toastmaster called upon the guests and each responded with a message to the new club.

Various plans were discussed for the organization of Teachers College Clubs in St. Louis, Kansas City, and other places as branches of the Missouri State Club, and much enthusiasm was shown toward this suggestion. The matter of the Library Fund was discussed and after an enthusiastic and enjoyable evening the club adjourned until its next meeting in Kansas City next year.

The following officers were elected for the year: President, Superintendent John Thalman, St. Joseph; first vice-president, Miss Constance Brown, Ben Blewett Junior High School, St. Louis; second vice-president, Miss Grace M. Shepherd, State Teachers College, Maryville; secretary-treasurer, Mr. George W. Diemer, principal, H. C. Kumpf School, Kansas City.

PHILIPPINE TEACHERS COLLEGE CLUB

At a meeting of the nine Philippine students now studying at Teachers College, held at Tong's Restaurant, New York City, plans were formulated for the organization of a Philippine Teachers College Club. Mr. R. G. Reynolds, field secretary of the Alumni Association, met with the Philippine group, and after a dinner, as near Philippine in its character as New York can offer, the organization of the new club was discussed. It is proposed to have two branches of the club, one at Teachers College, and one in the Philippine Islands. A committee was appointed consisting of Messrs. Fernando Bermejo, Florentino Cayco, and Gabino Tabunar to draw up a constitution for the club. At a later meeting held at Teachers College, the constitution was adopted and the following officers elected: President, Mr. Leodegario Victorino; vice-president, Mr. Fernando Bermejo; treasurer, Miss Josefa Abaya; secretary, Mr. Gabino Tabunar.

It is the desire of the members of the club to perfect an organization which will be helpful to the College and at the same time act as a connecting link between those Philippine students who may later attend Teachers College and the College itself. The club feels that by advising with and assisting these prospective students in various ways it can overcome many of the difficulties which students from the Philippines meet when they first come to Teachers College, and by an organized system of furnishing information, advice, and help to these students it will be doing both them and the College a real service.

The charter members of the club are Messrs. Leodegario Victorino, Fernando Bermejo, Florentino Cayco, Fortunato de Veyra, Gregario Lardizabal, Feliciano Evangelista, Gabino Tubunar, and the Misses Josefa Abaya and Caridad Trillo.

SOUTH DAKOTA STARTS A CLUB

At Huron, S. D., during the meeting of the South Dakota Teachers' Association about thirty former students of Teachers College gathered to make plans for a South Dakota Teachers College Club. Dr. E. K. Fretwell, who was one of the speakers on the Association program, met with the group.

After considering the matter, it was thought advisable not to elect officers this year but to begin at once plans for the organization of the club at the next state teachers' meeting. A committee to make all arrangements and to canvass all former Teachers College students in the state was appointed with Mr. Andrew J. Lang, principal of the high school at Huron, as chairman.

MARYLAND CLUB

On November 25, the Maryland Teachers College Club held its annual meeting. Fifty-three members were present at the dinner given by the club. The guest of honor was Dr. E. K. Fretwell, of Teachers College, who brought to the club a message from the College.

After the dinner the following officers were elected for the ensuing year: President, Mr. Nicholas Orem, Upper Marlboro; secretary and treasurer, Miss M. Annie Grace, 300 Park Avenue, Baltimore.

GENERAL TEACHERS COLLEGE CLUBS

The following officers have been elected for the Elementary Education Club and the Nursing and Health Club both of which are clubs of alumni of these departments of Teachers College:

Elementary Education Club

President: Jessie Francis Fair, 501 W. 120 Street, New York. Vice-president: Miss Nelle V. Rich, 106 Morningside Drive, New York. Secretary: Lelah Mae Crabbs, 50 Morningside Drive, New York. Treasurer: Willis Russel Greenfield, 534 West 124 Street, New York. Representative at Large: Emma B. Grant, Whittier Hall, Teachers College, New York.

Nursing and Health Club

President: Helen Boyd, 881 Lafayette Street, Bridgeport, Conn. Vice-president: Katherine Ink, 537 West 121 Street, New York. Secretary: Elsa Schmidt, 420 West 120 Street, New York. Treasurer: Anna A. Ewing, American Red Cross, 44 East 23 Street, New York, N. Y.

THE BUFFALO CLUB ENTERTAINS

During the annual meeting of the New York State Teachers' Association at Buffalo, the Teachers College Club of Buffalo entertained at dinner former students of the College on November 22. The dinner was served at the Ellicott Club, with nearly two hundred former students present.

The guests of honor were Professors Emma H. Gunther, Mabel Carney, William H. Kilpatrick, Edward S. Evenden, and Miss Agnes Burke, of Teachers College.

CONNECTICUT TEACHERS COLLEGE CLUB

At the annual meeting of the Connecticut Teachers College Club the following officers for the year were elected: President, Dr. A. B. Meredith, commissioner of education, Hartford; vice-president, Mrs. Frank F. Doreden, 61 Whitfield Street, Guilford; secretary-treasurer, Miss Marion C. Sheridan, 711 Orange Street, New Haven.

NORTHEASTERN OHIO TEACHERS COLLEGE CLUB

During the Northeastern Ohio Teachers' Convention held in Cleveland, October 28 and 29, the Teachers College Club of that section of the state met at the Hotel Winton for its annual luncheon. Covers were laid for eighty.

Miss Laura Gillmore, formerly of the Moraine Park School, Dayton, now general supervisor in the Cleveland schools, gave a humorous talk on "Adventures in Education." She was followed by Superintendent J. Patterson, of Bucyrus, who cited his adventures as a school administrator.

The following officers were elected for the year: President, Mr. Frank Pickell, Board of Education, Cleveland; vice-president, Miss Mary Gardner, 1930 East 84 Street, Cleveland; secretary, Miss Helen M. Fliedner, 1971 West 99 Street, Cleveland; treasurer, Miss Catherine D. Ross, 1834 Grasmere Avenue, Cleveland; corresponding secretary, Miss Lucretia Cavanah, 5009 Franklin Avenue, Cleveland; activities committee, Dr. Garry Myers, School of Education,

Cleveland; social committee, Miss Adelaide Van Duzer, Board of Education, Cleveland; program committee, Mr. Harry Bathrick, East Technical High School, Cleveland.

VIRGINIA TEACHERS COLLEGE CLUB

The annual meeting of the Virginia Teachers College Club was held on November 25 at the Hotel Richmond. Fifty members of the club were present. After the dinner, Dean W. L. Prince, of Richmond College, the president of the club, presided as toastmaster. He introduced as the first speaker Dr. David Snedden, of Teachers College, who brought to the club the greetings of the College and the news of its recent activities.

Following Dr. Snedden, Mr. R. G. Reynolds, field secretary of the Alumni Association, was introduced and discussed with the members of the club various matters relating to the Alumni Association and its members in the field.

After the speaking the election of officers was held, the following being elected for the coming year: President, Superintendent Robert K. Hoke, Prince George; secretary and treasurer, Miss Jessie P. Haynes, 3200 Second Avenue, Richmond. The election of officers completed the final part of the evening's program and was followed by "visiting."

Plans were started for the organization of a Richmond Teachers College Club, and with the large number of former Teachers College students in the city it is anticipated that a large and enthusiastic Richmond Club can be formed.

OKLAHOMA TEACHERS COLLEGE CLUB

The Teachers College Club of Oklahoma gathered at luncheon in Norman for its annual meeting. Dr. David Snedden, of Teachers College, was the guest of the club.

The following officers were elected for the coming year: President, Dr. G. P. Miller, University of Oklahoma, Norman; secretary, Miss Nora A. Talbot, 409 Knoblock Street, Stillwater; treasurer, Miss Helen Allison, Central High School, Oklahoma City.

NORTH CAROLINA ORGANIZES A CLUB

At a meeting of former Teachers College students held at Raleigh on November 25, the organization of a Teachers College Club for North Carolina was perfected. The new club starts with a membership of fifty. The following officers were elected for the year: President, Mr. James Francis Smith, High School, Durham; vice-president, Mr. C. C. Haworth, Board of Education, Burlington; secretary-treasurer, Miss Louise Lancaster, North Carolina College for Women, Greensboro; member, executive committee, Miss Mamie Lee Avent, Raleigh.

At the gathering, plans were discussed for a big meeting at the time of the next North Carolina Teachers' Assembly.

WEST VIRGINIA CLUB

Former students of Teachers College who are now in West Virginia met at a luncheon held in Huntington on November 3. Dr. Thomas H. Briggs, of the College, was the guest of honor. The group organized themselves into a West Virginia Teachers College Club and elected the following officers: President, Mr. H. W. Piggot, Grafton; secretary and treasurer, Miss Wilma C. Speare, Huntington.

The meeting was an enthusiastic one. The message from Dr. Briggs was greatly appreciated. Literature concerning the Alumni Library Fund was distributed and much interest was shown in the campaign.

MONTANA ALUMNI MEET

On Tuesday, November 22, at Great Falls, Mont., about thirty-five former students of Teachers College met for

luncheon. Dr. Freeman Daughters, professor of education at the State University in Missoula, had charge of the gathering. A luncheon was served and matters relating to the Alumni Library Fund were discussed.

SOUTH BEND ORGANIZES A TEACHERS COLLEGE CLUB

At a breakfast held in South Bend, Ind., on October 15, about forty former students of Teachers College gathered and completed the organization of a South Bend Teachers College Club.

Dr. Thomas H. Briggs and Dr. David Snedden from the College were guests of honor and spoke to the members of the club. The following officers were elected for the coming year: President, Miss Ada Hillier, 1104 South Michigan Street, South Bend; secretary-treasurer, Miss Alma Collmer, 412 South Lafayette Boulevard, South Bend.

MINNESOTA CLUB

The Minnesota Teachers College Club of Columbia University held its eighth annual dinner and business meeting in Minneapolis on the evening of November 3. Seventy-nine guests were present. Miss Katharine Hamilton, assistant superintendent of schools in St. Paul, presided. The guests of honor were: Dr. Agnes L. Rogers, Goucher College; Dr. Fannie W. Dunn, Teachers College; and Miss Theda Gildemeister, president, Minnesota Educational Association.

Dr. Lotus D. Coffman, president of the University of Minnesota, presented the matter of helping Teachers College in its Library Fund Campaign, and it was voted that the chair appoint a committee to take up this work.

The following officers were elected for the coming year: President, Miss Katharine Hamilton, assistant superintendent of schools, St. Paul; vice-president, Mr. Starkweather, superintendent of schools, Duluth; secretary and treasurer, Mrs. Josephine Halvorsen, kindergarten director, public schools, Minneapolis.

DR. SWIFT JOINS ARKANSAS SURVEY COMMISSION

Dr. Fletcher Harper Swift, of the College of Education, University of Minnesota, who received his Doctor's degree at Teachers College in 1905, has been appointed by United States Commissioner of Education J. J. Tigert to make a survey of the system of school finance of Arkansas which is to constitute a part of the educational survey of that state to be conducted under the direction of the Bureau of Education.

During the past few years, Professor Swift has devoted himself largely to research in the field of school finance, and has published numerous studies and magazine articles bearing upon this field. Two of his recently published studies are *Public School Finance in Alabama* and *Public School Finance in Colorado.*

MR. BURDGE JOINS EDUCATIONAL FINANCE INQUIRY

Mr. Howard Burdge has been appointed assistant director for the state of New York on the staff of the Educational Finance Inquiry which is being carried on with headquarters in New York City under the direction of Dr. George D. Strayer.

Mr. Burdge was formerly educational director of the New York State Military Commission, also superintendent of schools at Wellsville, New York.

RECENT ALUMNI APPOINTMENTS

The Bureau of Educational Service has received notice of the following recent appointments:

ACHESON, EDNA, director of religious education, Tonawanda, N. Y.

ALLEN, RENA, special demonstrator for methods department, Teachers College, Detroit, Mich.

ASH, RALPH E., instructor in English and public speaking, Junior College Hibbing, Minn.

BAIRD, WILLIAM JAMES, principal, Boyles High School, Jefferson County, Ala.

BOARDMAN, LESTER, professor of English, State Teachers College, Greeley, Colo.

BRINKLEY, S. G., department of education, Soochow University, Soochow, China.

BRONSKY, AMY, supervisor of primary department, State Normal School, Superior, Wis.

BROOM, WILLIAM J., principal, Grammar School, Lakewood, N. J.

CALDWELL, ALEXANDER B., Lincoln Memorial University, Harrogate, Tenn.

CAMPBELL, MABEL VERNE, professor of home economics education, University of Kentucky, Lexington, Ky.

CLARKE, EUGENE A., principal, Miner Normal School, Washington, D. C.

CLEMENTS, SANFORD LYNN, principal, Training High School, Nebraska State Normal School, Chadron, Neb.

DAVIS, EVA, supervisor of elementary schools, Tulsa, Okla.

DE LONG, LEO R., assistant in department of history, Teachers College, New York City.

DIEBOLT, ALFRED L., head of department of history, State Normal School, Plattsburg, N. Y.

DRASER, MARY, assistant professor of fine arts, State Teachers College, De Kalb, Ill.

DREWRY, LEONARD E., principal, teacher-training department, Virginia Seminary and College, Lynchburg, Va.

DUNLEVY, BEATRICE, supervisor of Junior High School, State Normal School, Bloomsburg, Pa.

DUSTIN, GERTRUDE O. L., supervisor of home economics, Public Schools, Bethlehem, Pa.

EASTERLING, ALICE, supervisor of drawing, State Normal School, Oswego, N. Y.

EDGERTON, A. E., chief of the Division of Vocational Information, Public Schools, Detroit, Mich.

GARDINER, RUTH, dietitian, J. N. Adam Memorial Hospital, Perrysburg, N. Y.

GARVER, F. M., professor of elementary education, University of North Dakota, Grand Forks, N. D.

GERLACH, MIRIAM, dean of women (acting), State College of Washington, Pullman, Wash.

HAECKER, MARY M., supervisor of primary work, State Normal School, Edinboro, Pa.

HEATHCOTE, D. J., instructor in public speaking, High School, Kalamazoo, Mich.

HUNT, CLEMENT W., deputy commissioner, Department of Public Welfare for the State of Pennsylvania.

HUNTINGTON, ALBERT H., teacher of mathematics, Cleveland High School, St. Louis, Mo.

JENNINGS, JOE, chief clerk and supervisor of teacher training, Tennessee State Department of Public Instruction, Nashville, Tenn.

JONES, ADELE M., associate professor of costume economics, Margaret Morrison School, Carnegie Institute of Technology, Pittsburgh, Pa.

LAUTZ, AMALIA, dietitian, Presbyterian Hospital, New York City.

LEE, EDWIN A., assistant in vocational education, University of California, Berkeley, Calif.

LONG, ALMA I., Bradley Polytechnic Institute, Peoria, Ill.

MCCORMICK, ANNE E., home demonstration agent, University of California, Berkeley, Calif.

MCLEAN, LILLIAN I., primary group director, State Normal School, Indiana, Pa.

MEISTRIK, EMMA, principal, Training School, Southern State Normal School, Springfield, S. D.

MELVIN, ARTHUR G., assistant in department of English, Teachers College, New York City.

NOWLAN, F. S., lecturer, University of Manitoba, Winnipeg, Man.

PLENTY, MRS. JANE G., instructor in methods, Normal School, Newark, N. J.

RAKER, W. W., principal, High School, Bloomsburg, Pa.

SHEPHERD, GRACE, supervisor, rural education, State Normal School, Maryville, Mo.

SIFFORD, JAMES POTTS, principal, High School, Newton, N. C.

SINDELL, LEROY J., head of department of vocational education, University of Kentucky, Lexington, Ky.